SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2054.—VOL. XLV. LONDON, SATURDAY, JANUARY 2, 1875. PRICE (WITH THE JOURNAL) SIXPENCE. PER ANNUM, BY POST, £1 4s.

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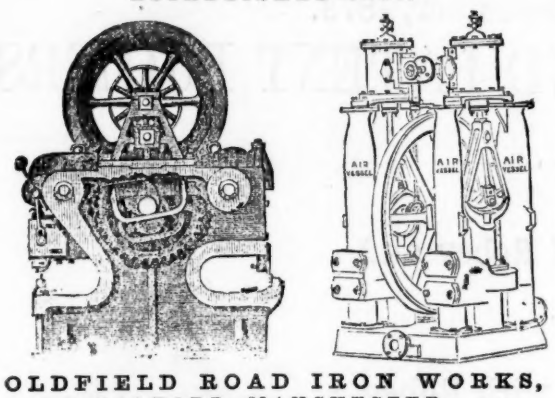

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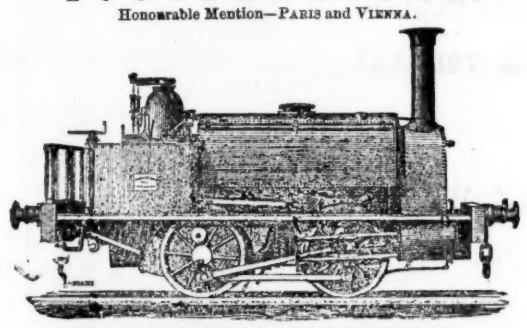

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BICKFORD, SMITH, AND CO., of TUCKINGMILL, CORNWALL; ADELPHI BANK CHAMBERS, SOUTH JOHN-STREET, LIVERPOOL; and 85, GRACECHURCH-STREET, LONDON, E.C., MANUFACTURERS AND ORIGINAL PATENTEES of SAFETY-FUSE, having been informed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—
EVERY COIL of FUSE MANUFACTURED by them has TWO SEPARATE THREADS PASSING THROUGH the COLUMN of GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM TWO SUCH SEPARATE THREADS as THEIR TRADE MARK.

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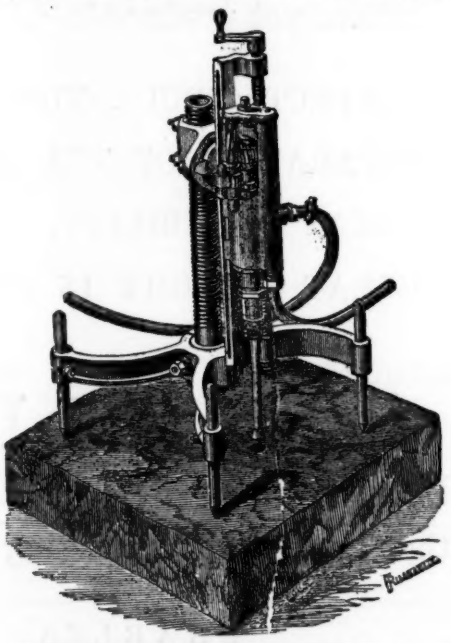

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At sea or on shore, and are the
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In the boiler to the piston at the top and bottom of the stroke automatically cutting off the steam according to the requirements of the work, thereby effecting an
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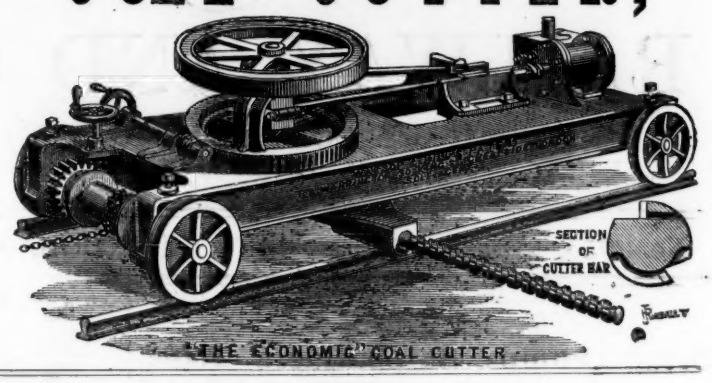
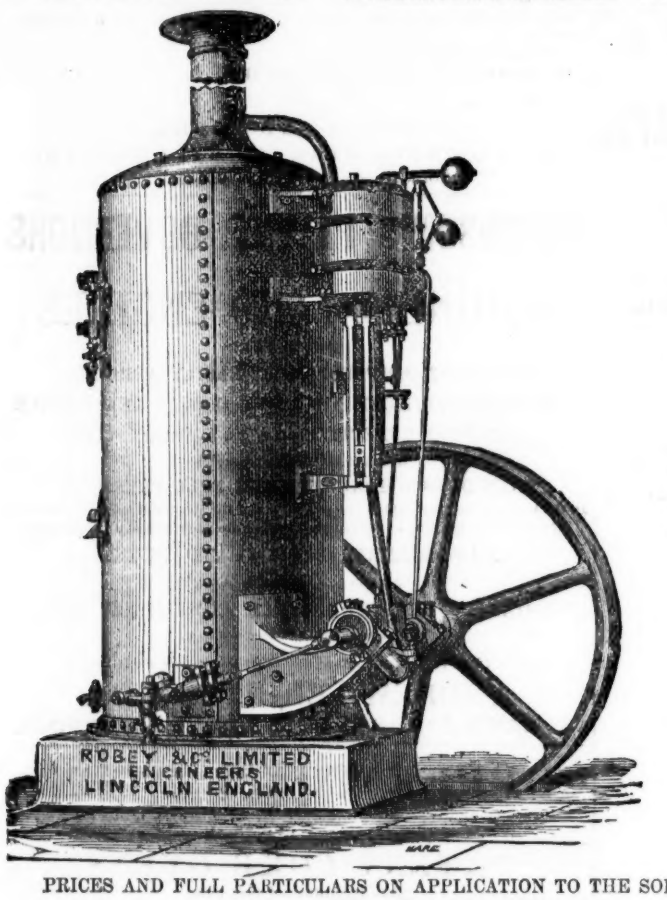


"THE ECONOMIC" COAL CUTTER

Patent No. 4136 - - - - - - Dated 16th December, 1873.
Patent No. 4150 - - - - - - Dated 17th December, 1873.

IMPROVED VERTICAL STEAM ENGINES AND PATENT BOILERS COMBINED.



The Illustrations show one of Robey and Co.'s improved vertical engines.

All these engines are supplied with Robey and Co.'s new patent vertical boiler, as per section illustrated, which has, among others, the following advantages over all vertical boilers yet produced:—

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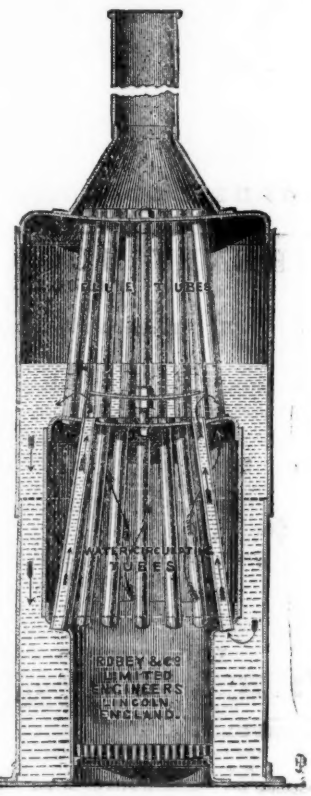

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WILTON'S MATHEMATICAL INSTRUMENT ESTABLISHMENT, REMOVED from St. Day to A. JEFFERY'S, CAMBORNE.

W. H. WILTON begs to thank his friends for their liberal support for so many years, and informs them that (having opened business at Valparaiso) he has now declined business in England in favour solely of Mr. A. JEFFERY, MATHEMATICAL INSTRUMENT MAKER, CAMBORNE, whom he considers (having been an assistant to his father for several years) is in every way capable of creditably maintaining the good name universally awarded to Wilton's Instruments.

A. JEFFERY

Respectfully begs to inform Mine Managers, Surveyors, Engineers, &c., that having purchased Mr. Wilton's business, and the very valuable acquisitions and appliances belonging thereto, he has enlarged his Mathematical Instrument Manufactory, and is prepared to supply THEODOLITES, DIALS, POCKET DIALS, LEVELS, TRAVERSING and PLAIN PROTRACTORS, CASES OF DRAWING INSTRUMENTS, MEASURING CHAINS and TAPES, ASSAYERS' SCALES and WEIGHTS, ENGINE COUNTERS, and, in short, every description of Instruments used in SURVEYING, MEASURING, MAPPING, &c.

Repairing in all its branches promptly attended to.

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PATENT RANGOON ENGINE OIL.

THIS OIL is suitable to every kind of Machinery; it is used almost exclusively in Her Majesty's Dockyards and Fleet, and by the War Office and East India Government; as well as by the Royal Mail Steam Packet Co., Pacific Steam Navigation Co., P. and O. Co., Cunard Co., and by most of the other important Royal Mail Steam Fleets in the kingdom. It is also extensively employed on the various railways, and by many of the leading engineering and manufacturing firms at home and abroad. "Chemical Laboratory, 7, Printing House-square, Blackfriars, April, 1869.

"I hereby certify that the Rangoon Engine Oil, manufactured by Messrs. Chas. Price and Co., is free from any material which can produce corrosion of the metal work of machinery. It is calculated, indeed, to protect metallic surfaces from oxidation, and, from its peculiar character, is not liable to lead to spontaneous combustion of cotton waste or any similar material which might become imbued with it, as is the case with Rape, Gallipoli, and Olive Oils. The lubricating power of this oil is equal to Sperm or Lard Oil

T. W. KEATES, F.C.S., &c., &c., Consulting Chemist to the Board of Works"

Extract from Mr. BAXTER'S Speech in the House of Commons, May 31st, 1870:—

Chas. Price and Co.'s Rangoon (...) a vastly superior article" (speaking of Gallipoli Oil at £79 per ton)—"was obtained for from £46 to £45 per ton."

Every parcel of the Oil sent from the Works bears the Trade Mark of the Firm, and as many spurious imitations of the Rangoon Engine Oil are sold purchasers are requested observe that none is genuine which does not bear this mark.

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SECOND-HAND RAILS, AND EVERY DESCRIPTION OF RAILWAY, COLLIERY, AND CONTRACTORS PLANT ALWAYS ON HAND.

Original Correspondence.

MINING ON THE PACIFIC COAST—NEVADA.

TYBO MINING DISTRICT, NYE COUNTY, NEVADA, AND THE TYBO CONSOLIDATED SILVER MINING COMPANY (LIMITED) OF LONDON—No. I.

SIR,—Previous to my departure from Eureka, Nevada, on Nov. 26, for the advancing mining district whose name forms in part the heading to this communication, I promised to furnish through the *Mining Journal* such data in regard to it as I should be able to collect during my sojourn within its limits. In this and the series of brief articles that are to follow it in regular weekly succession, from Nos. I. to VI., I will try and fulfil my promise as faithfully and as truthfully as it is possible to do it. It might, however, at the outset be well to state that the chief aim of these letters will be to impart to the mining operators of your great city, and to your readers in general, such information as can be relied upon in relation to its geographical extent and location, inauguration as a mining district, its geological formation, and the mineral resources generally of itself and the circumjacent districts, by a few of which it is bounded. This place was originally named Devine district, but this being entirely too plain and too easily understood, it did not meet with unanimous approbation, therefore the former baptismal act was, by vote at a subsequent meeting of the sovereigns of the district, declared nul and void, and of no force whatever. The baptismal font being again approached, it this time received the aboriginal appellation by which it is at present known, and under which it will descend to posterity through the mining annals of the State; while those swarthy children of the wilderness, the Shoshone tribe of Indians, from whose language it is derived, will have passed forever away before the superior civilisation of their pale-faced brothers. The word Tybo means "White Man district." This is the literal Anglo-Saxon translation. In travelling through this State one meets with many of the euphonious Indian words in the nomenclature of the out-of-the-way towns and camps which sometimes spring up wherever the precious metals are found with as much rapidity of growth as though Aladdin and his wonderful lamp had called them into existence.

The district has a geographical area of ten square miles, bearing chiefly to the south and west, on account of the great mineral indications which the country presents towards these cardinal points. It lies, as far as I have been able to judge in the absence of maps, somewhere between 38° and 39° of north latitude, and is in an air line about 550 miles south of the great commercial emporium of the Pacific-San Francisco. Its actual distance, however, from the latter point by the route now travelled cannot be much less than 700 miles. It is also distant 100 miles to the southward of the celebrated Richmond Mine, at Eureka. It was located as a mining centre, with defined boundaries by laws, &c., in the summer of 1870. It being thus formally and legally proclaimed a mining district, in accordance with usage and legislative enactments, it gradually grew into public notice, and began to attract the attention of San Francisco capitalists, many of whom kept an eye upon the splendid property, now owned by the Tybo Consolidated Silver Mining Company (Limited), with a view to its purchase. But in this they were disappointed, for the former popular and energetic superintendent of the Richmond, Mr. John B. McGee, had it bought for himself and three others, two of whom are well known in the London mining circles, while the other one was equally well known in this quarter of the world long before the above gentlemen thought of making an effort to possess it.

The promulgatian of the new mining laws had also the effect of giving a fresh impetus to prospecting, for the miners being assured of being protected in their rights should they become successful applied themselves more vigoreusly than ever to searching and delving amidst the wild mountain fastnesses for the precious stuff, which when discovered would reward them for all their toils and tribulations. It was during this feverish period that the now famous "Two G," "Casket," "Lafayette," and "Crosby" Mines, owned by the aforesaid company, were discovered, a description of which I will give in the proper place.

Another great advantage in favour of the future of the district is its proximity to the route to be followed by the proposed narrow-gauge railroad to the Colorado river. There are, or will be by the 1st prox., 45 miles of this important enterprise completed between Palasade on the Central Pacific, and Eureka on the south. The completion of these 45 miles of road will leave but 40 more to be finished next season to the latter place. These 85 miles, however insignificant they may appear when compared with the great trans-continental highway which spans the placed Pacific and the stormy Atlantic, will, nevertheless, go far to revolutionise matters in Eastern Nevada. They will place us within easier access of the great commercial centres, from which we draw our supplies, and to which we in return transport our natural staples of gold, silver, lead, copper, borax, hides, tallow, and wool. They will also, as a matter of course, cheapen both freight and travel immeasureably, thus benefiting the public, and adding to the value of its property, whether in land or mines. The value of the latter they will also greatly enhance, by affording a quicker and cheaper mode of transportation for their products, and the other commodities that are produced by the application of our citizens to the other industrial pursuits that are fostered by the State.

To illustrate: The Richmond Company, whose works are at Eureka, have to pay at present $15 per ton freight on its bullion to the Palisado Station, the northern terminus of the above road. This in itself is no insignificant item of expense, when we come to consider the monthly bullion product of said company, which, under a former manager, used to average 500 to 600 tons per month. By taking the smaller amount and multiplying it by $15, we get a product of $7500 per month which had to be paid for the transportation of its bullion, a distance of only 85 miles. Here was $90,000 per annum spent on the freight of its bullion alone. Will the introduction of the aforesaid road to Eureka reduce this heavy expenditure? I answer—Yes, one-half at least, if not more, and then leave a handsome margin for profits to the railroad company. In the same manner, even though the snort of the iron horse is never heard outside of the former place, nor hereabouts, though 100 miles distant, will receive our full share of the good things that are to come.

I have been informed by J. B. McGee, superintendent of the Tybo Consolidated Company's property, that he has to pay at present $28 per ton for freight on his bullion from here to the Palisado, 185 miles. With the advent of the railroad into Eureka this amount would be reduced at least in the neighbourhood of 30 per cent., or to $20 per ton. He will not, however, ship much crude bullion in future, for with the completion of the calcining and refining works, now in process of erection, he will be able to dispense with the services of freighters of bullion entirely, it being his intention to calcine and refine his bullion, using the litharge thus given him for future smelting purposes.

The next letter of the series will be devoted exclusively to a description of the most important of the outside districts.

Tybo, Nye County, Nevada, Dec. 6. J. D. POWER.

MINING IN UTAH—THE DEVONPORT MINING COMPANY.

SIR,—The history and position of this property is but a sad repetition of all Utah mines, without, unhappily, one single exception. Under the chairmanship of Mr. Phillpotts, with his brother (of Eberhardt repute) as manager, Davenport has come to financial grief, and placed under attachment. My principal object, however, in writing to you is to ask whether the Gordon and Co., whose names figure so prominently among our creditors, have any connection with the veritable "Joe Gordon," who has so magnanimously stepped out of the way to put money into the pockets of the Tecoma shareholders? If this be the case, self-abnegation can go no further. Joe Gordon has leased the Utah mill, has offered to lease the Tecoma Mines, and to pay the shareholders 20,000*l.* a year, when he could have as easily obtained it for one-fourth the amount; and $20,000 are due to Gordon and Co. on account of the Davenport Mine. After all that has been said about the Davenport, with its teeming resources and high-grade ore, we have the astounding statement of the newly-appointed manager that there is no ore whatever in the mine, and that it is simply a prospect! This involves a serious charge upon Prof. Clayton, who, it will be recollected, reported upon it in the early part of 1874, without (it is now alleged) having inspected the mine at all! When there is added to this the fact that we have an indebtedness of nearly $120,000, and that our future is alone based upon the sandy foundation of hope, I think prudence will dictate that we should keep our money in our pockets, and be no more led away by unfounded and misleading statements.

Dec. 28. A SHAREHOLDER.

RICHMOND MINING COMPANY.

SIR,—I noticed in the Supplement to last week's Journal a long letter from Mr. Power, who speaks very highly of the mine, while indulging in remarks derogatory to its present manager, Mr. Probert. On enquiry, I find that Mr. Power was dismissed from the company's service for neglect of duty, by which a serious risk to the works was incurred; his hostility to Mr. Probert is, therefore, easily accounted for. Bearing in mind the fact that that gentleman only went out at the request of his colleagues to take the general superintendence as resident director till the permanent manager was able to proceed to Eureka, the attacks made on him by the anonymous writers on this side, and those by the more honest, because avowed, adversaries on the other side are, to say the least of them, in excessively bad taste, the more especially as under his rule the mine is turning out such a grand success.—*Dec.* 24. A SATISFIED SHAREHOLDER.

ON AUSTRALIAN AND TASMANIAN TIN.

SIR,—Having read some articles in late numbers of your valuable Journal in reference to Cornish and Devon tin mining, and being an old country mining manager, now of twenty years' mining experience in nearly all the Australian colonies, will you kindly grant me space to say something on Australian tin? In the colony of Victoria stream tin has been worked in the neighbourhood of the Ovens for many years in conjunction with gold, and about Albany, "just over the border," it is also found, but in both those instances the supply is uncertain, the deposits being usually light and heavily covered with debris, and would hardly pay unaccompanied by gold. I do not think it likely that any considerable supply may be expected from this source. In Gippsland, the eastern portion of Victoria (which is rich in nearly all the minerals), stream tin has been found in many of the creeks and rivers, but as the country is yet almost a *terra incognita* it would be premature to predict what may yet be found in the way of tin lodes; however, up to the present nothing but stream tin has been found, and that not in great quantities either.

In the colony of New South Wales, in the Inverel district, a considerable deposit of stream tin was found three years since, and has been worked with varying success, in consequence of the prevalence of black sand in many of the creeks, which, through the want of the requisite knowledge, was in many instances allowed to remain in the tin ore, thereby injuring its market value, as well as making it more difficult and expensive to treat in the furnace. Unless they find something fresh the New South Wales tin fields will not long produce any great quantity of stream tin, and the veins and leaders found up to the present are too inconsiderable to deserve the name of lodes, although I have seen some very fine specimens of lode tin found occasionally. In the colony of Queensland, at Stanthorpe, close to the borders of New South Wales, the largest and most promising deposit of tin found in Australia has been working now for the last two or three years, but, like the other columns, it is stream tin of good quality, and in many instances heavily deposited, but up to the present nothing worthy of the name of lode has been found, and many of the creeks and gullies have been already worked out, and at no distant day the supply of tin from this source will fail very considerably, without some discoveries are made. I have heard within the last few days a heavy deposit of black sand, largely impregnated with tin, has been found in the northern portion of Queensland, on Stormy and Pine Creeks, near the Palmer gold fields, about 50 miles from Cook Town; this may become a very important tin district when fully developed.

And now last, though not least, comes the little Island of Tasmania, which is rich in many minerals, especially iron and tin; the deposits of the two latter are unrivalled in any part of the world, but as I am now writing on tin I will stick to my text, and treat of the iron in future letters. The chief deposit of Tasmanian tin (I had almost said of the world's tin) occurs at Mount Bischoff, about 35 miles from Emu Bay, on the north-west coast. The Mount is of considerable height, being 3000 ft. above the sea level; it is evidently of volcanic origin, and the surface stone is composed of decayed granite, porphyry, and quartzose rock, through which the tin is disseminated in varying quantities and qualities, according to its situation, that nearest the Mount being the heaviest deposited, coarsest, and least pure. The wash-dirt varies from 3 ft. to 40 ft. deep, and averages from ½ lb. to 7 lbs. clean tin to the dish of dirt; and as there is no superincumbent mass lying on it beyond a foot or two of light decayed vegetable matter, it is the cheapest worked mineral deposit I ever saw, and where the sections are on either of the rivers should be washed out at about 6*l.* per ton of tin ore. The tin occurs here unlike anything I have ever seen before, and I am not acquainted with any similar deposit in any other part of the world. It is purely lode tin, and must have been deposited in its present state and situation by volcanic action, as it is quite impossible any other agency could disseminate it in the finely divided state it is found in—coarse and fine granular tin and slime ore, and near the Mount large pieces of the lode weighing from 1 lb. to 1½ cwt., all quite unwaterworn, and showing clearly that the mineral has never been subjected to action of water in any way; and as it is found alike on the hill tops, slopes, hollows, and creeks, I am of opinion it has been thrown there by some vast volcanic eruption, and in all probability from some tremendous depth, as there is up to the present not the least trace of any lode or tin-bearing rock to be found beyond that appearing on the surface and through the wash-dirt; the latter everywhere, so far as proved, is overylying the slate bed-rock—this is the general formation of the country lying between the Waratah and Arthur rivers, which nearly encircle the Mount; unlike most lode tin it is nearly free from contamination by other minerals; it is grey ore, and though it has not a prepossessing appearance to the eye, still it assays well, making 70 per cent. to 73 per cent., and when properly dressed will, of course, give a corresponding yield in the furnace; but as the companies at present working are purely Tasmanian, and consequently know nothing about the necessity of trained and experienced knowledge in conducting their operations, they have people both in the management and dressing department who are perfectly ignorant of tin and all other minerals except gold; the consequence is they are losing all the slime and much of the fine granular tin, too; indeed, I should say they lose nearly, if not quite, one-third of what the wash-dirt contains, and of course the finely-divided portions are the purest of the mineral, and yet all in connection with the companies, are so ignorant of the mineral that they cannot see the loss they are suffering.

I spent nearly four weeks on the ground during the winter, and the manager then informed me the ore they saved cost about 20*l.* per ton on the ground. They have washed out about 400 tons of tin ore from 9 or 10 perches of ground. There is untold wealth in the Mount Bischoff sections, and all the ground within the Waratah and Arthur rivers is tin-bearing and payable. The whole of the sections within the rivers is already taken up and held under lease for 21 years from the Crown, at the yearly rent of 5s. per acre. When the Van Diemen's Land Company makes the tramroad from Emu Bay to the mine it will greatly enhance the value of the latter, as carriage to the coast, though only 35 miles as the crow flies, has been the great difficulty. I think Mount Bischoff will for the next 20 years be a great tin-producing district, by which time the gigantic lode the present deposit has been upheaved from may be found, and produce tin for future generations. Tin has also been found at House Top, a mountain about 35 miles north-east from Mount Bischoff, and within some 18 miles of the coast, and again 10 miles to the south of the Mount it has been found, as also at George's Bay and Boobgalla river, on the east coast, the samples from which yield very nice ruby tin, only that it has not yet been found in any quantity—from 1 oz. to 1½ oz. to the dish being the rule—but the country is open forest land, and close to the sea for shipment. All the country outside the Waratah and Arthur rivers is basaltic rocks, consequently no tin has been found outside these rivers, and if any does exist it must be underlying the basalt. On one of the sections down Tin Creek, towards the Arthur river, silver has been found to the extent of 100 ozs. to the ton, and here also a small quantity of asbestos was found.

ARCHIBALD GEORGE ENGLISH,
Scott's Hotel, Melbourne, Nov. 3. Mining Engineer, &c.

CAPE COPPER MINING COMPANY.

SIR,—With reference to the letter of "A Shareholder," in last week's Journal, I think we can without the aid of Mr. Scholefield, or any other stockbroker, very easily show the Cape Copper Mining Company is in a very flourishing state. Since the last annual meeting, in July last, the Company have sold 6330 tons of copper ore, realising 161,123*l.*, and by far the greater portion of which brought from 16s. 1¾d. to 17s. 10½d. the unit, although valued at 15s. 6d. at the meeting by the Chairman. The principal mine (Ookiep) has yielded on an average 900 tons of ore per month the last two months, and 822 tons for the previous four months, the two last monthly returns being at the rate of nearly 11,000 tons per annum, as against 7750 tons yield in 1873, 8351 tons yield in 1872, 7340 tons in 1871, and 6658 tons in 1870, the produce being about the same. It appears also by the last monthly report that one at least of the trial mines is about turning out a trump, with ore of a very rich quality. It also appears from the last monthly report the company are now making available, by means of their new and improved machinery, the enormous accumulations of many years' surface ore, 130 tons having been picked and dressed during the month; this ore averages 24 per cent., and valued at Swansea at about 20*l.* per ton, whilst the cost at that port will not exceed 5*l.* per ton to the company.

I think it right to give your correspondent the "guiding knowledge" that, notwithstanding the present "depressed condition" of the copper market, and even at a less price than that obtained at last sale (16s. 11d.), the quarterly dividends are much more likely to be increased than continued at 20s., and that the *bona fide* shareholders (who are well aware of the object of "Shareholder's" letter, published on the eve of the fortnightly settlement) have no intention of parting with their property to enable him to purchase at the present low value of the shares.—*London, Dec.* 31. AN INVESTOR.

ROCK DRILLS.

SIR,—With a view of practically testing the benefits to be derived from the use of rock borers in lead mining, I venture to submit to the respective proprietors thereof the following proposal. The offer is made *bona fide*, after due consideration, and in the belief that the drills will be found useful, and should the proposed trial be successful, it will doubtless revolutionise the present ancient slow method of mining.

I am a director of a lead mine (at present nameless); shaft sunk from surface about 140 fms.; four levels are being driven in good ends, and from the stopes about (say) 50 tons sent to market. The captain is a skilled practical miner, a believer in and desirous of trying the drills in the mine. The directors are men of business, but not practical miners; they shrink from the cost of introducing the drill and consequent expense, lest it should not answer expectation, but they are willing to pay all costs if successful. It seems to me that not only has every industry improved except mining, but that has stood still almost from the beginning, and that everyone is frightened to test the methods for improvement now suggested.

These are my suggestions:—

1.—That any of the proprietors of rock drills shall lay down at the mine requisite engines, compressors, air-pipes, and three or four drills. In fact, every requirement for driving the levels by drills.

2.—That all labour shall be found at cost of mine.

3.—That the drills shall be kept in use for at least six months, so as thoroughly to test them.

4.—That if required, reports of the work shall be made from time to time to your valuable Journal.

5.—That if at the expiration of six months the experiment is a success the company shall purchase and pay the market prices of the machinery actually in use. If not, to be removed.

6.—Any dispute to be left to arbitration.

I wait reply. As a guarantee of good faith I enclose my card.

D. E.

THE NASCENT PROCESS.

SIR,—The evidence adduced by "A. B. C." with regard to the silver contained in lead ores throughout the nation, and the reasonable inference drawn therefrom with regard to the startling quantity represented to be contained in poor copper ores being disputed by "An Agent of 29 Years' Standing," some few further remarks on the question may not, perhaps, be out of place on the eve of the great experiments which are about to be made to test the products of different mines in the West of England.

It has from time to time been confidently stated that the burrows in copper mines generally contain a large quantity of mineral, and one writer goes so far as to state they will yield on an average many ounces of silver per ton into the bargain. Doubtless throughout the western counties burrows may be found that, with a good standard, would pay to some little extent for dressing, but they are few and far between. In the first place, the raisings from underground as a rule are carefully picked over, and in nine cases out of ten the leavings are afterwards dressed and sold. The impression that burrows generally in the West contain mineral of any kind in sufficient quantities to pay for extraction will be found to be a very erroneous one.

"An Agent of 29 Years' Standing" pays a poor compliment to his fellow-agents by insinuating that thousands of tons of ores containing a good percentage of copper are thrown over the burrows. A good portion of this *fact* is surely drawn from his imagination. He also states that this process of extraction has proved a success in Cornwall. Will he be good enough to say where?

Dec. 29. ANOTHER MINE AGENT.

THE "NASCENT COPPER PROCESS."

SIR,—I cannot understand how "A Practical Mine Agent of Twenty-nine Years' Standing" should take umbrage at the few remarks which you kindly inserted for me in the Journal. Having the welfare of mining at heart, as well as pocket—for I hold many shares in mines which for profits are at present not intrinsically worth in the aggregate the value of the smallest coin of the realm—I am anxious to know if the process of Mr. Barnard, Dr. Emmens, or whoever may be the inventor or proprietor, is really as valuable as one or two prominent mining men claim it to be. There is, unfortunately, so much misrepresentation connected with mining, and with but little profits derived from the few legitimate and earnest searches for mineral, that one hardly dare believe in a genuine success. Like the boy and the wolf, we poor speculators in mines have had so many promises made and broken that no wonder if we at last refuse for a season to recognise the real only as an ideal. I am obliged for the information given by your correspondent, and must agree with him that the general impression is conveyed through the minds of most mining men that large quantities of lodey refuse, containing 2 per cent. of copper and several ounces of silver per ton of stuff, are thrown away as valueless. Allowing this to be substantially correct, and the "Nascent Copper Process" to have one-half the merit propounded upon its behalf, all I can reiterate is that three or four of our leading mines would return more silver than the whole of the mines in the United Kingdom, taking as my guide the report and statisties of Mr. Robert Hunt. I have no time to go over the same ground again, and, drawing the attention of any interested readers to my last letter, I still maintain that not 1 oz. or even 1 dwt. of silver, or its value, is obtained by the miner for every ton of lodey matter turned over; and if the version of your correspondent can be authenticated, that the poor ores thrown away are richer for silver than those purchased by the smelters, I should think it strange that the combined talent of England's noted mining men has only hitherto grasped at the shadow to ignore the substance. I am somewhat converted, but still partly

sceptical, respecting the capabilities of the Nascent Copper Process, and can only add that if it will really turn the many woes of mining into rejoicing no one will be more pleased to chant its refrain than—

London, Dec. 30. A. B. C.

HINDRANCES TO SUCCESSFUL MINING—No. II.

SIR,—The average of mine setts in Cornwall are from 700 to 800 fathoms, from east to west, and generally comprise two or more lodes, with a cross-course, caunter, or elvan, and unless worked by spirited companies, such as Mellanear, Penhale Wheal Vor, Wheal Agar, &c., only one of the lodes are worked on, and that to a limited extent of 30 or 40 fathoms in depth, or 80 or 100 fathoms in length, and if the mine be not productive it is wound up, and to even dream of trying another part of the sett would be considered absurd. I could point to many mines where after years of working only a paltry few fathoms have been developed, and could enumerate others which during the late panic were to be resuscitated, but the company has never seen the object for which they started. Such mining has not only a detrimental tendency to injure that one sett, but its ruinous effects are felt through the district for many years, to say nothing of the depreciating of the landholders' property.

Why are not the hidden measures disclosed, why are not the noble metals laid open to our gaze, and why is not the long-neglected diamond on Golconda's shore disengaged from its impurities? Causes: 1. "What is worth doing must be done slow" in the development of Cornish mining. The adventurers and agents are certainly cognisant of the fact that the work which now takes three years in many mines to accomplish could be performed in two years, and, therefore, a year's consumption of coal, grease, agencies, &c., would be saved, or an equivalent to the development of many fathoms of ground. Large pumping-engines are, and have been, kept working for years for a dozen or score men with pretty near the same cost as if 100 men were working, who would execute at least four and seven times as much in the time as a dozen or score men respectively.—2. The agents' hands are tied. The committees say you must reduce the working monthly cost to a maximum of —*l.*, and the agents cannot run counter to the wish of their masters, and develope the property as they would. The ancients have left us an example of development in their shoal working; every place they worked bears an analogy to a honeycomb, although their mode of working was not commendable.—*Gwinear, Dec.* 30. EDWARD SKEWIS.

SUCCESSFUL AND UNSUCCESSFUL MINING.

SIR,—The trumpet has sounded, and we are promised a disquisition as to the hindrances of successful mining by Captain Edward Skewis, under six different causes. With reference to the last, it is in my opinion out of place for one agent to descant on the capabilities or precise qualification of another, and I venture to assert that there is scarcely a mining agent in Devon or Cornwall but possesses some good points. Mine agents are generally appointed by shareholders, committees, or manager, the latter, to a certain extent, holding himself responsible. Therefore, if Capt. Skewis is to sit in judgment on some of we poor unfortunates, I hope we shall be committed to his merciful consideration. Capt. Skewis has some special information no doubt, but, without anticipating his remarks, I may say that I know of a tin mine, with machinery sufficient, and a course of tin in bottom of shaft, left unwrought. I presume this means non-development. I know a copper mine where a new patent buddle was erected at a cost of over 200*l.* to return 50 tons of low-price copper. I presume this would come under the head of absolute waste of money, or would it be worthless machinery? I shall be anxious to peruse Capt. Skewis's remarks on this subject, and, in the course of subsequent discussion, which is sure to ensue, I hope we shall not forget the old axiom that those who live in glass houses ought not to throw stones.—*Dec.* 24. S. CLARKE.

MINING ACCOUNTS—THE THIRTEENTH MONTH.

SIR,—The accounts presented to the adventurers at some mine meetings recently held seem to be complicated by a charge "on account of the thirteenth month." Why should this be? If the meetings were held every eight, twelve, or sixteen weeks, why could not the returns credited be the value of the ores raised or sold during the same time? In the cases of tin and lead mines there can be no difficulty, and probably the copper smelters would not object to hold 26 copper ticketings a year, instead of 24, as at present. It is to be feared that under the present system 48 weeks' costs will often be charged, and 52 weeks' ores be credited, the result of which can be predicted by any business man, and the writer knows to his cost.

Dec. 30. CORNWALL.

CRENVER AND WHEAL ABRAHAM UNITED MINES.

SIR,—I trust that our valuable property will not be sacrificed to the prejudices of those in charge—I say valuable property, and so it is, if worked properly. But what is the use of 20,000*l.*, or even 100,000*l.*, upon the old style of mining? The more money expended only means the greater loss! I happen to know that the mines can be made to pay immense profits, but it can only be done by following the course of the New Great Consols in adopting the "Nascent Copper Process." I have good authority for making these remarks; a greater boon than this invention was never conferred upon mining, and with such properties as ours it will be only sheer obstinacy and folly if success does not follow upon success. For instance, the New Great Consols, but for this new process, would have been wound up ere this, and curses deep, if not loud, showered upon the head of Capt. Pryor, who, with all his mining experience, had no more power to make that mine pay dividends than he now has to ascend into the clouds; but, thanks to some active brains, the new invention for turning losing "bals" into paying ones was entertained at headquarters, a plethora of money came in to erect the necessary works, and the reward is being reaped. I trust that my few remarks will bring forth fruit, as I confess to being most anxious to see our extensive property worked upon a large scale, and every ton of mineral substance made to yield up its product of silver, copper, and other metals, little or much.

Little did ever I think that Mr. Barnard would have been the means of advancing legitimate mining; but we live in the days of mysteries; and reviewing some of his highly-coloured letters, I can now discern a spirit of real earnestness diffused throughout the whole of them. I presume that there will be no difficulty in making arrangements with Dr. Emmens, or Messrs. Emmens Brothers, who are the proprietors of the patented "Nascent Copper Process."

Dec. 29. SHAREHOLDER.

CWM DWYFOR MINE.

SIR,—I see in the *Mining Journal* of the 19th inst. a report of the meeting of this company, held on the 18th. Having, in the summer of last year, inspected and reported on Cwm Dwyfor Mine, I am much gratified to learn from what transpired at that meeting that the favourable representations I then made as to the prospects of the company are being, or are about to be, realised. I felt assured from what I saw of the several lodes of copper and lead ores then exposed to my view that at no distant period great success would be the result of the working if fairly prosecuted.

The situation of the mine near the summit of a mountain, without any good roads for the transit of the materials and supplies to the mine and of the produce from it, rendered it necessary that the railway to Portmadoc should be completed before anything effectual could be accomplished. I see from the report that the railway is nearing its completion, so that that desideratum, so much desired, will shortly be available to the company, its ultimate terminus being on the mine. This railway will enable the company to bring up all the supplies and to transmit the produce on easy terms, which at present cannot possibly be done.

The prospects of the company being so good, I have no doubt that the shareholders will readily take up among themselves the remaining unallotted shares, instead of allowing strangers to do so. The shareholders are personally unknown to me, but as I am always desirous that speculators in mines should be successful, I congratulate them on the very satisfactory condition of their affairs.

Truro, Dec. 23. R. SYMONS.

[For remainder of Original Correspondence, see to-day's Journal.]

IRON ORE REGIONS OF THE UNITED STATES—No. IV.

The mineral wealth of MISSOURI is perhaps as well, if not better, generally known to the world than that of any other section of the United States. The celebrated Iron Mountain, probably the largest single deposit of ore in the known world, has attracted the attention of geologists, metallurgists, and both scientific and practical men from all countries. The ores of Pilot Knob, Shepherd Mountain, Cedar Hill, and Buford Mountain are next in interest, and present curious features to the geologist. The development of these ores has been going on for some years, and the total shipments from the State have reached the sum of 400,000 tons annually. A newer, but almost as valuable, ore region is found in Phelps, Crawford, and Dent counties, the lands of which have but lately been brought into market, but have attracted the investment of large amounts of capital, especially from the iron manufacturers of the Ohio Valley. Although the leading deposits of Iron Mountain and Pilot Knob are in the hands of old and wealthy corporations, opportunities are daily offered for the purchase of extremely valuable iron ore lands on the line of both the Iron Mountain and Atlantic and Pacific Railroad. Near all the chief stations on the latter road fine deposits of iron ore are found, and ore lands may still be purchased for from $5 to $50 per acre, according to locality, contiguity to railroad, and amount of development. Unfortunately the State of Missouri does not possess the coal fields of many of the other iron ore regions; if she did it is questionable if any State in the Union would equal it in advantages for iron making. Fortunately, however, there are large coal fields in Illinois, the coal from which is now successfully coked, and furnishes a good fuel for blast-furnace purposes. There are, moreover, said to be large deposits of anthracite coal in Kansas, from which in time the Missouri ores will draw their fuel. Charcoal timber for the present and many years to come is, however, abundant, and the industry is progressing rapidly in all sections. Missouri has fully appreciated the valuable mineral wealth within her borders, and by a liberal expenditure obtained full information of its character. Recognising also the value of educating her youth in the scientific and technical knowledge necessary to the successful development of this wealth she has established and supports a thorough School of Mines at Rolla, where under the tuition of Prof. Charles P. Williams, formerly of Philadelphia, and a metallurgist and analytical chemist of no little note, they are thoroughly instructed in the duties which may devolve upon them as managers of mines and furnaces hereafter. Prof. Williams has also made some valuable contributions to the knowledge of the more lately discovered ores of Missouri.

The region of workable iron ore reaches north of the Missouri at one point only in Calloway county, where red hematite occurs in the sub-carboniferous. South of the river deposits are frequent throughout the whole southern part of the State. That portion richest in iron ores, however, is comprised in a broad belt crossing the State in a direction about parallel to the course of the Missouri river between the 30th and 40th township lines. This belt is divided into three distinct regions. The first and more easterly embraces the deposits of limonite in the counties of Ballinger, Wayne, and Madison, and the small but immensely productive Iron Mountain district, with its two enormous deposits of specular ore in porphry, Iron Mountain and Pilot Knob, besides numerous smaller deposits. The second or central region comprises the deposits of specular ore in sandstone, chiefly in the counties of Crawford, Phelps, and Dent. The third region contains the limonite and red hematite deposits of the Middle and Upper Osage, a district too remote from present markets to add very much to the immediate wealth of the State. The oldest, as well as the richest, deposits are in the iron-bearing porphyries of the eastern—a formation regarded as a near equivalent in point of age to the iron-bearing rocks of Lake Superior, New Jersey, and Sweden.

NEW JERSEY is rich in iron ores, which have been worked from pre-revolutionary dates, and still furnish the main dependence of the great furnace companies of the Lehigh Valley for admixture with the hematites of their region. The ores of New Jersey are almost entirely magnetic oxides, with some specular peroxide and some limontes, but even these rather mingled with the magnetic ores than as separate deposits. The magnetic oxides are similar to those of Lake Champion, but of finer grain, compact, smooth, and lustrous. These ores lie in the counties of Sussex, Passaic, Morris, and Warren, and are included within an area of less than 400 square miles. Some of these mines have been worked for over a century and a half, and formerly furnished the ores for the largest proportion of iron made in the United States. They are in many cases still worked in the same localities as originally opened, with no sign of exhaustion. The principal magnetic oxides worked by the Lehigh companies of Pennsylvania are located near Rockaway and Dover. About three miles north-east of Rockaway is the Hibernia Mine, producing some 24,000 tons per month, and employing some 500 men. The Oxford furnace ores are black magnetic, yielding from 45 to 60 per cent., and have been worked since before March, 1743, at which date the old furnace of this company, now a lime-kiln, was blown in. Pigs of the early iron-bearing date, 1745, are still kept at this furnace. The deposits of ore here are very extensive, and the iron produced from these ores has always been celebrated for quality. New Jersey contains, in addition to the ores mentioned here, one of the most curious and refractory ores of the country in the Franklinite magnetic ore of the Walkill Mountain. This ore is a black ore, with 66 per cent. peroxide of iron, 16 per cent. of zinc, and 17 per cent. of red oxide of manganese. This ore has been a mystery to many smelters, and the subject of several patent processes. The Franklin Iron Company works a magnetic ore near here, and the Franklinite ore above mentioned is used by the New Jersey Zinc Company, which also makes a grade of spiegeleisen from it, which is now considered as pure as that imported. The Franklinite iron made from this ore is used for purposes requiring great strength and hardness, as burglar-proof safes, &c. New Jersey has not engaged as extensively in the iron business as would have been supposed from the great extent and purity of her magnetic ores, but this is rather from the fact that they worked better as admixtures than alone. The mining of these ores has brought large amounts of capital into the State, and will continue for years a source of great profit.

SILVER MINING IN CANADA.—The Thunder Bay Silver Mining Company estate, situated on the waters of Lake Superior, Canadian side, and other mines in the close vicinity of it, owned by English capital, have been inspected and reported upon by Mr. A. Stewart, of Montreal. He believes the first-named company has the great ledge of the district, and that it is well worthy of an outlay. The lode he considers to be without doubt a true fissure vein, displaying every evidence of its genuine worth. He does not hesitate to say that the Shuniah and this are one and the same lode; they both run in nearly the same direction, and are both held in the same formation. He remarks that a permanent increase in production can only be effected by a systematic opening of a mine and of stoping ground which affords a reserve. There is no lack of good mines in the district, as he thinks it is in the heart of the great silver belt, but in his opinion the mode of working the silver will have to be changed. The many advantages that belong to the estate are unrivalled. Water, fuel, and other facilities for working ore—land sufficient to produce wheat, hay, grain, vegetables, &c., that may be required on the work, a good road from Prince Arthur's landing to Black Bay, cutting the estate in two, and within ¾ mile from the mine, and about the same distance from the mill—all these things go a long way in reducing the expense in working property of this character. He thought it advisable to ascertain in what formation the silver was found, and the strike of the veins in that belt. He found the country that held the silver in the quartz, commenced in the vicinity of Silver Islet Mine, running back of Thunder Cape, one of the headlands of Thunder Bay, nearly due north until it approached the water of the bay. Bearing a little north-easterly, it cuts the water of the Currant river, and passes parallel with the Duncan Mine, about due east and west. The lode of that company has been traced for one mile, or more, on the mainland, running through a break in the headland, and one shaft has been sunk to the depth of 70 ft., and very fair rock taken from it. It has been prospected in other places the entire distance of the tracings. The belt lies in the arc of a circle. The ledges in these different localities cut the country rock at a slight angle. The course of veins is about N. 40° W., or nearly N.W. and S.E. The country rock is granite, which is, he thinks, nothing more than a cap. Here, for a distance of 40 miles one way and 20 another, the country has been explored with fair results. Some of the mineowners working the mines under great disadvantages have obtained results by no means as great as the districts could render. There exist enormous quantities of ore at Thunder Bay, which although called worthless there would in older countries be called very rich. At Shuniah Mine the old working shaft is down 166 ft., but is at present filled with water up to the 80 ft. level, and as the company has only allowed Capt. Nichols a certain amount per month to operate with his work has at all times been limited. With this discovery and the character of the ore Mr. Stewart looks upon it as a fine property. The vein was filled by a horse making its appearance where the pay was lost. How far it extends east has not been shown. With their showing this company could well afford expensive reduction works and means to put their mine in splendid working condition. Ore that will not yield at the rate of $300 per ton is looked upon as worthless at the present prices of milling. More valuable discoveries have been made during the summer, among them in McKeller and Pie Islands. The veins on these islands are of sufficient width to afford any amount of ore for milling purposes. He thinks he never in his life saw such samples as were shown him from the many locations in that vicinity. Thompson's and Jarvis Island and the Empire Mine are also looking well.

FOREIGN MINING AND METALLURGY.

Business in copper has been quiet at Paris, and prices have remained without any material variation. Chilian in bars has made 92*l.*; ditto ordinary descriptions, 93*l.*; ditto in ingots, 96*l.*; English tough cake, 96*l.*; and pure Corocoro minerals, 90*l.* per ton. There is nothing fresh to report with regard to copper at Havre. The Marseilles copper market has ruled tolerably firm. The tone of the German copper markets has become rather less animated of late. Tin has experienced scarcely any variation upon the Paris market; Banca, delivered at Havre or Paris, has made 104*l.*; Straits ditto, 99*l.*; and English, delivered at Havre or Rouen, 99*l.* per ton. During the whole of last week, Banca tin was in good demand at Rotterdam to meet the requirements of consumption; some rather important transactions are mentioned as having taken place at 57½ fls. Billiton has remained quiet; some transactions have been noted at 55 fls., with delivery in January; disposeable Billiton is held at 55½ fls. The German tin markets have ruled very quiet. There is little to report with respect to the Paris lead market; prices remain well supported; French, Belgian, and German lead remain quoted at 23*l.* 16s. per ton, without reference to the place of delivery. The tendency of the German lead markets has been favourable. Upon the Paris zinc market firmness has been the prevailing characteristic; Silesian, delivered at Havre, has made 25*l.* 8s.; and other good marks, delivered at Havre or Paris, 25*l.* 4s. per ton. There is little to note with respect to the German zinc markets.

Business has moved on rather indifferently this week in the Belgian iron trade; in fact, it can scarcely be said to have moved on at all. There is, indeed, almost complete stagnation in all branches of Belgian metallurgical industry, and in all pursuits dependent upon them. Complaints as to the state of affairs have become general, and industrials are only sustained by the more or less uncertain hope of a revival in business in the spring. Upon the whole, 1874 must be said to have closed gloomily. Some transactions have taken place in Bessemer cast-steel, and even in ordinary pig, at slightly reduced prices; and if the general situation is not shortly modified, some fresh concessions may be anticipated on the part of sellers. Most of the rolling-mills are only working short time; it is hoped that some tramway concessions will soon be granted, and afford that employment to works which they greatly require. The railway plant manufacturing establishments remain in a depressed state; the Evrard Company has completed the sale of some locomotives which it had made beforehand for Russia, but no other contract of any importance has been secured. A report which has obtained currency to the effect that a Belgian company was about to undertake the construction of lines in Finland does not appear to have any foundation. Russia is purchasing just now scarcely any railway *materiel* abroad; at the present time about 1000 passenger carriages and nearly 20,000 trucks are in course of construction in Russia, and they are made entirely of native materials. The Russian Government and the Russian railway companies may have to pay a somewhat higher rate for *materiel* made under such conditions as these; but the aim of the autocratic Government of Russia is to encourage mechanical industry in its vast territories, and so long as this object is attained the Russian authorities are indifferent to every other consideration. A new blast-furnace has been lighted by the Acoz Forges Company; this makes the fifth furnace in activity at the company's works. There has been no variation in the price of iron and plates upon the Belgian markets, which generally remain feeble. The administration of the Belgian State Railways has let a contract for three lots of turn-tables to M. Carels, of Gand. The Belgian Metallurgical and Colliery Company also secured a contract for one lot. A quantity of old fish-plates were purchased by Herr Vogel, of Berlin, at the relatively high price of 3*l.* 7s. to 3*l.* 7s. 6d. per ton.

A new joint-stock company has been formed under the auspices of the Bank of Belgium for the purpose of working deposits of iron ore in the vicinity of Schwarzenberg, Raschau, Lichtenfels, and Hoff, in Saxony and Bavaria, and for the production of Bessemer pig-iron. Hoff is to be the centre of activity, and eight furnaces are to be there constructed. The place is favourably situated for railway communication, and the company has purchased coal pits in the neighbourhood of Pilsen. A Belgian, M. de Bavay, is the chairman, the head offices are to be in Dresden, and the capital is 12,000,000 francs (480,000*l.*).

Stock-taking and account-closing have so occupied the attention of French industrials during the last few days that there is very little fresh to report with respect to the French iron trade. The French Railway Plant Company will pay Jan. 2 an interim dividend for 1874-5 at the rate of 12s. per share.

Winter has commenced in earnest in Belgium, and coal for household purposes has ruled firm in consequence. A serious, and almost general, strike has occurred in the Charleroi district; this event has, of course, exerted an adverse influence upon the calculations of colliery proprietors, and it is very doubtful also whether it will eventually benefit the men concerned. Colliery proprietors have been endeavouring to check in the Charleroi basin the migratory habits of the men employed by them; the men have resented any interference with what they regard as their liberty, and hence the present strike. Hopes are entertained that the conflict which has arisen will be peaceably terminated in a few days.

The last week of the year has brought with it little of interest to the French coal trade. Upon the whole, it must be said that the past year has been a period of depression for the trade, notwithstanding the short resistance made by French coalowners.

Correspondence from Essen states that the revival which had been anticipated in that district has been checked. Want of water in the Rhine has prevented for two months the delivery of coal to Holland. The merchants of Ruhrort, Duisburg, Hochfeld, &c., have seen their warehouses rapidly refilled, and they have been compelled in consequence to suspend the execution of contracts into which they had entered with local colliery proprietors. The latter have, in consequence, been obliged to contend with accumulations of coal at the pits' mouths, and they have found it necessary to restrict their production in order to deal with the state of affairs which has arisen. During the last few days the Rhine has again become navigable, and deliveries have shown rather more activity, but prices of combustibles remain very much at the point at which they stood in October, if, indeed, they are not a little lower. This remark does not, however, apply to coke. Circumstances which have recently transpired tend to the conclusion that the coal basin of the Ruhr extends practically into the Liége district.

GENERATION AND APPLICATION OF HEAT AND MECHANICAL POWER.—The novelties which constitute the invention of Mr. J. S. RUSSELL, of Sydenham, are chiefly the utilisation of the products of combustion in producing mechanical power, just as those of the steam-boiler are utilised. The steam gases of the boiler and the fuel gases of the furnace are used to work engines together or separately. The two sets of gases may also be combined. The gases may possess chemical value, and have chemical applications in addition to their mechanical value. These gases are stored, or used in storing other gases, or compressing them, and forming reservoirs of power. The generating heat and power are applied to locomotion on land or water by boilers much lighter, stronger, and more powerful, and by mechanical appliances ensuring convenience and durability.

DESILVERING LEAD.—Mr. J. A. CICOGNANI (for Baron Podesta, of Genoa), has patented some improvements in desilvering lead. In this provisional specification the process of desilvering lead is divided into seven stages:—1, Melting the lead in pots, and skimming.—2. Introducing zinc into the pot, and skimming off the argentiferous zinc.—3. Heating the desilvered lead in a reverberatory furnace to remove the remaining zinc.—4. Roasting the zinc scum on the inclined sole of a furnace to allow some of the lead to run out.—5. Treating the zinc scum to transfer its silver to a comparatively small quantity of lead.—6. Cupelling the rich lead in stage 5.—7. Treating the slag produced in stage 5.

Meetings of Public Companies.

NEW QUEBRADA COMPANY.

An ordinary general meeting of shareholders was held at the City Terminus Hotel, on Tuesday,—Mr. N. LEAROYD in the chair.

In the absence of the Secretary (Mr. T. G. Gillespie), through indisposition, the notice calling the meeting was read by Mr. THOMSON.

The directors' report, which had been circulated amongst the shareholders, was taken as read.

The CHAIRMAN said that the directors had the pleasure of meeting the shareholders in the month of August last, and the meeting would not expect that he had much to tell them with respect to the interval of four months; but the directors all thought it desirable that this meeting should be held. The shareholders were aware that there had been some irregularity in the holding of the meetings, and they were wishful, as was announced at the last meeting, to return to strict accord with the Articles of Association, and hold the half-yearly meetings as therein prescribed. In order to do that it was necessary to hold a meeting at a shorter interval than usual, and so it came to pass that the present meeting was held at an interval of only four months from the last meeting. He had not much to tell them, and the report which had been sent out might appear somewhat barren; but the duty of the directors, as he conceived, was not to gloss over anything, or to hold out glowing anticipations, more than was warranted by the strictest facts. The directors had not received very many communications from the mines in the interval; and he was bound to say, in the strictest candour, that in some respects the information which had been received in the interval had not been of the most favourable kind. In the first place, there had been during the last four months a rainy season almost unparalleled in that extraordinary country—in fact, it had not been equalled for 30 years, and the shareholders would be able to judge of its intensity when he told them that on one occasion the rains were such that in a period of a few hours the waters rose 16 feet, washing away bridges, and carrying away some 200 tons of ore. This had much interfered with the progress of the railway, although nothing had occurred to interfere with the permanent prospects of the undertaking, or to cause anything like apprehension or alarm. Yet there had been temporary disappointments. At the same time, these temporary circumstances ought not to be exaggerated; there was nothing in any way to permanently alter the anticipations which had been held out to the shareholders. There was no reason whatever to doubt that the railway would be completed and opened within the time contracted for between this company and the Bolivar Railway Company; no engineering difficulties whatever had been found, and although he should hesitate to express an opinion, which a hundred circumstances might interfere with, as to the period within which the railway would be completed, yet, the contractors were still sanguine that the railway would be completed as far as La Luz by Midsummer next. It might be that in this respect they might be disappointed; he did not recommend the shareholders to be too sanguine in anticipating an earlier completion, and he should be satisfied if it was completed, and the ore brought over it, by the end of next year. He might be told that at the last meeting he informed the shareholders that the anticipation of the contractors was that it could be accomplished by the month of May next; well, the directors simply stated what they were told. Their information was not personal information, but simply grounded on to what they received from others, but, judging from the progress made since last they met, he expressed his individual opinion that he should be content if they got the railway completed, and ores carried over the entire length, during the course of next year. (Hear, hear.) During the last four months the directors had had some unsatisfactory reports as to the health of the staff. The principal agent in Venezuela (Mr. Warmington) had been laid aside by fever; the mining superintendent (Mr. Richardson) had likewise been laid aside, and so also had several of the superintendents of the line. This, no doubt, was attributable in a great part, and perhaps mainly, to the long continued and extraordinary rains, but he was glad to say that the latest accounts were very much more reassuring. Mr. Warmington had reported that he was convalescent, and Mr. Richardson also, and as the dry season returned no doubt the fever would disappear. Since the last meeting nothing whatever had occurred to alter the anticipations which were then held out as to the character and resources of the mine, or to occasion doubt of the accuracy of the information as to the quality or the extent of the ore; there was no reason to doubt that all which had been held out would be fully realised. Work had never been interrupted at the mine, although it had not progressed so rapidly as could be wished in consequence of the circumstances he had mentioned. There was no new occurrence to alter the representations made at the last meeting. Probably some gentlemen might think that what he had told them could not be regarded as very encouraging or satisfactory, but, as he had already stated, the directors could only state what was told to them. The board watched the progress of the works with the greatest care, and were in constant communication with their officials, and everything possible was being done both here and abroad to hasten the progress of the works, and realise the expectations which had been held out. With reference to the mines, which were more immediately under the control and supervision of the board, he believed the report which the directors had to present would be in all respects satisfactory. At the last meeting he stated they were free from all litigation, and all sources of annoyance and peril, with the exception of one matter, to which he briefly alluded—the suit which was brought against the company by the late contractors, Messrs. Carr, Simmons, and Co. It was the directors' duty to deal with them in a very careful manner, at a public meeting especially, as there were present some gentlemen connected with the suit on that side who were present to hear what was said, but he had no hesitation in saying that it was a suit which had very much engaged the consideration of the board. The management, or, at any rate, the supervision of this matter, was deputed to a committee of the board, who met weekly, and received from the solicitor, week by week, reports as to the progress of the business, and saw that everything was done which could be done to prevent the company losing the advantages which it was believed to possess. He might state frankly that the suit was of a kind which could not but be regarded with gravity—not alarm, but gravity. The claim which was put forward was very large indeed; it was not only a claim for alleged breach of contract with respect to the making of the line, but a claim also for breach of contract with respect to the ultimate carrying of the ore along the line, for Messrs. Carr, Simmons, and Co.'s contract was not only for making the railway, but also for carrying the ores. It must be obvious that if there had been an adverse result it would have been a serious thing, and although he did not believe there would be that, still it was impossible to say. Therefore, the directors did not regard with disfavour some approach which was made for a compromise and settlement of the suit. By the kindness and confidence of his colleagues the conduct of those negociations very much depended upon himself, and he had great satisfaction in telling them that the result of those negociations (in which he was bound to acknowledge the candour and courtesy of Mr. Moon, who represented the plaintiffs in the suit) was an effectual settlement and compromise of the suit, by which the company paid 2100*l.*, and obtained a complete release and abandonment of all claims on the part of Messrs. Carr, Simmons, and Co. (Cheers.) He believed that was a compromise for which the shareholders might feel thankful, and having a better knowledge of the circumstances of the suit and the contingencies he had no hesitation in saying that it was a result on which they might heartily congratulate each other. There was one matter on which he had nothing to say which would be otherwise than agreeable. At the last meeting he stated there was a probability that the directors would have to call the shareholders together again before the end of the year, and he said that financial considerations would render it desirable. Some gentlemen were pleased to ask whether those financial considerations were of an unpleasant kind, and he answered that they were not, and he would repeat that answer now. The shareholders had known from the commencement that it was necessary to raise money for the working of the mine until they were supplied with an income from the sale of the ores. It was calculated that the mining and general expenses—mainly, the mining expenses—might be estimated at from 1200*l.* to 1500*l.* per month. He was glad to say that the directors had made an arrangement with Messrs. Matheson and Co., by which the company was secure in obtaining all the money. Messrs. Matheson had consented, readily and heartily, to advance, if necessary, 30,000*l.* or 25,000*l.*, to be secured by debentures issued at par, carrying interest at the rate of 8 per cent. per annum, with the option to them of exchanging them for shares in the company at par, after giving proper notice to the company. The directors thought the notice should be given, in order that they might have the opportunity of paying off the debentures without giving the shares. But the directors went further: they felt that this opportunity was one which ought to be offered to the shareholders; therefore they stipulated that they should first have the option of submitting to the shareholders the option of advancing the money on the same terms substantially as those on which Messrs. Matheson would advance it. Therefore it was the directors' intention very shortly to send circulars to the shareholders, stating in detail the terms upon which they were prepared to receive advances. The directors proposed to receive money from the shareholders, as they might require, in sums amounting to not more than 30,000*l.*, and in order to secure the repayment to issue debentures at par (50*l.* debentures), carrying interest at 8 per cent., repayable in five years, with the option to the directors to pay them off at any time after three years, and with the option to the shareholders during the three years of taking the company's shares at par. The debentures were made of a small denomination, in order as far as possible to afford all shareholders an opportunity of participating in the benefit of making the advances, and securing the debentures. With a capital of 310,000*l.* there could be, humanly speaking, no possible doubt or contingency about the safety of the debentures to the extent of 30,000*l.*, and the directors anticipated that long before the three years were expired the shares of the company would be enhanced in value to considerably more than par, so the option offered of taking shares at par during the three years was likely to be appreciated. The directors had arranged with Messrs. Matheson not to be bound to take the money at once; at present the directors had no occasion for it, therefore the money would be called for as it was required, and the rate of interest would run from the date of the advances. In order that they might not be in a worse position if they took it from the shareholders, the directors proposed that the amount should be advanced quarterly, a quarter in January next, and a quarter at intervals of not less than three months successively from that time. At a later stage of the proceedings he would propose a special resolution on that subject. In conclusion, the Chairman moved the adoption of the report and accounts.

Mr. F. H. HEMMING (deputy-Chairman), in rising to second the proposition, said the Chairman had left him very little to say, but on one subject he thought it due to Mr. Learoyd to state that which he could not so well say himself, though he (the speaker) thought the shareholders would fully support and concur in what he was about to say. In regard to the settlement of this important question of litigation, both himself and his co-directors were bound to acknowledge the great experience brought to bear upon it by their Chairman, and particularly the efficacious means he had taken to bring about so desirable an object. (Hear, hear.) They all knew of what were termed the "glorious uncertainities of the law," but there was one certainty about the law which he believed had never been found wanting, which was that it was a very expensive thing—(laughter)—and that it sometimes happened the victor suffered as much as the vanquished. In this particular case he thought the arrangement most satisfactory to the shareholders, because it relieved their minds of a weight which could not otherwise than have pressed heavily upon them when they recollected the results of previous litigation of the company. (Hear, hear.) He thought, also, the contractors, notwithstanding what they might originally have had an idea of, had no reason to be dissatisfied with the arrangement made. But his principal object in again alluding to this matter had been to acknowledge the great debt that both the directors and shareholders are under to the Chairman for bringing that result about. With regard to the raising of the money, he thought—particularly after the various reports that were occasionally brought to him—that the shareholders would be very pleased to hear that the company required so small an addition to their capital as 30,000*l.* to put the undertaking, as the board believed, beyond the reach of the necessity of ever requiring any more. It was so small a sum that (as their Chairman had mentioned) it would only increase their capital, now amounting to 310,000*l.*, to 340,000*l.* Now, in offering it to the shareholders, with the option of taking shares at par at a future time some might say, "Indeed it is no great offer, the option of shares at 5*l.* which may now be bought in the market at 3*l.*" Well, that would be very true if the shareholders were going to be required to declare their option at once, but they would have ample time to do so, because the directors believed that long before the time of declaring that option had arrived the company would be in a very different position to that it now occupied. (Hear, hear.) A great number of people had waited upon him to ask his advice upon different things in connection with the company, but he made a practice of never giving it—(laughter)—but he said instead that he would tell them what he, as a shareholder of the company, was going to do, and they might follow that course or not as they pleased. And in the same way with regard to such portion of this new capital as was offered for subscription, he intended setting the example of taking all that belonged to him proportionate to his holding in the company, and if there should be any more offering afterwards he would be an applicant for that. (Hear, hear.) There was only one other subject to which the Chairman had not alluded—the very general knowledge that there had recently been an insurrection rather than a civil war in Venezuela. He had heard, moreover, that there were extraordinary rumours on the Stock Exchange to the effect that all the company's works were stopped, and that it would be a very long time before they resumed operations. Now, he was happy to be able to tell the shareholders from the most official sources, because only six or eight days since he had had a letter from the President, informing him that the insurrection had been confined to so small a space that it was the opinion of everybody there that it would be almost immediately put down, and in the meantime it had interfered really very little with the company's works, because the adverse weather that had prevailed of late had proved a much greater enemy than even this insurrection. But he was not without hopes that even that might turn out most advantageously to the company, because they had reason to believe (unless there were an entire change of nature there) that the weather in January would break up, and be fine for some months to come. Then, again, the fact of the outbreak of the insurrection might prove a source of advantage to the company, for the Government would naturally be very anxious to find some employment for a large number of troops collected for the purpose of putting down this outbreak, and seeing that that would be the case he had written some weeks ago to Gen. Guzman Blanco (relying upon the insurrection soon ceasing), requesting that he would be good enough—and he knew that he would be able to do it—to put as many men as he could at the disposal of the contractors for the making of the railway. In that way the insurrection would be the means of supplying the company with a most valuable amount of labour at a time when it was extremely important it should be to hand. (Hear, hear.) Now he had thought it necessary to tell the shareholders these few facts, because he knew there had been extraordinary reports circulated as to the extent of this interruption to the peace of the country, but it was considered of no importance even by the merchants residing there. Mr. Hemming concluded by formally seconding the motion for the adoption of the report.

Mr. FIELD said there were two points upon which he had not very clearly understood the remarks of the Chairman. One was whether the board proposed at once to create this 30,000*l.* of debentures and to issue them, receiving quarterly the payments upon the whole amount; and the other point was that they required when the option of exchanging debentures for shares was exercised that notice should be given, so that the directors might have the opportunity of paying the money instead. He did not quite understand how that would operate, because that would amount to its being no option at all.

The CHAIRMAN replied that the directors proposed to issue the debentures at once for the whole of the 30,000*l.*, making the amount of them payable by four instalments in the way he had previously mentioned, interest to be paid from the time the respective payments were made. With regard to the question of the option of exchanging debentures for ordinary shares he had evidently been misunderstood. The notice of the exercise of such option had reference only to the advance by Messrs. Matheson. If they advanced the money they had stipulated that they should have the option of taking it out in shares at par, and the directors had agreed to this proposition on the understanding that Messrs. Matheson should give them notice of their intention to avail themselves of this option, so that the board might have the opportunity of paying off the debentures. (Hear, hear.) The notice of the exercise of the option had reference to Messrs. Matheson only, and not to the shareholders.

A SHAREHOLDER supposed that if the whole amount was taken up by the shareholders no advance would be required from Messrs. Matheson.

The CHAIRMAN said no; Messrs. Matheson would advance only just so much of the new capital as the shareholders did not take up. The Chairman then went on to state that he had omitted to mention just one thing in regard to the finances of the company—that the directors had arranged with Messrs. Matheson that the first advance should be 5000*l.* And they had done so for this reason—they were determined that they would not permit the company to owe one shilling. (Hear, hear.) At present substantially they owed nothing beyond some law bills, and they had requested Messrs. Eyre and Co., who had hitherto acted as the company's solicitors, to send in all bills to the end of the year, so that they might deal with them and pay them if proper and correct, and they further proposed by means of this advance they were to receive to keep down every kind of expenditure.

Mr. WARD asked if the board reserved to itself the option of paying the debentures off at par between the three and five years?

The CHAIRMAN regretted he had not made himself clearly understood. The terms of the contract between the company and Messrs. Matheson relative to this advance had been embodied in a letter written by himself to that firm, wherein it was provided that if they made the advance they made it for a period of three years certain—it being obviously unfair that they should take the money one day and pay it back the next. Then it was further stipulated that during the continuance of the loan Messrs. Matheson should have the option of converting it into shares—immediately afterwards if they thought fit, but that they should give the company a reasonable notice—the exact time was not yet fixed, but he supposed not less than three months, of their intention of converting it into shares, and that then the company should have the option of paying off the loan if desirous and able to do so. The terms were rather general terms, embodied at present only in the letter he had written to Messrs. Mathieson, which letter and the reply were in the hands of the company's solicitors to embody in a proper legal form.

Mr. WARD pointed out that the proposed debentures were to be for five years, yet the board had stipulated with Messrs. Matheson for an advance, the option to convert which into ordinary shares held for only three years. He desired to know how the two worked.

The CHAIRMAN explained that if Messrs. Matheson chose to say they wanted to take shares to the amount of those debentures, and in exchange for the debentures, they were to have the right to do so, provided always that the company did not elect, after receiving due notice, to pay them off. The directors proposed to issue the debentures for five years; the option to convert the same held for three years, and then it lapsed.

A SHAREHOLDER asked for some information relative to the condition and progress of the company's works, and how many miles of the railway were completed up to the present time?

The CHAIRMAN replied that it was not very easy to answer the question of the hon. proprietor, because the construction of the line was not proceeding simply in one place, but it was being laid in sections as it were. For instance, they were working up from Tucacas to Quebra Vara, and down from Palma Sola to Quebra Vara.—Mr. HEMMING: And also on the upper part.

The CHAIRMAN said there was also a large number of men at work on that part of the line running from Palma Sola to the mine. Therefore, it was almost impossible to tell the shareholders what quantity of the work was done. He thought he might say, however, that as far as Quebra Vara the work was completed, and that he was told was the most difficult part of the line. Now there was another matter of interest, that up to the present moment he had omitted to mention. At the last meeting he had told the shareholders that the question of termini had been occupying the attention of the board for some time past, and that they were most serious questions. First, as to the terminus in connection with the mines, whether they should try and accelerate the completion of a mode of transit of the ores by a temporary construction until the railway could be completed up from La Luz, and then in the second place whether they should stop at Tucacas or go on to Punta Brava. With reference to the mines' terminus the directors had arrived at a conclusion unanimously, and without any kind of hesitation, after getting all the information on the subject before them, not to try and anticipate by a temporary arrangement the construction of the permanent mode of transmitting the ores, because they had been told first of all it would save only three months, and next the cost of making it would be far greater than was justifiable for so small a saving of time. (Hear, hear.) But they had had a great deal more doubt and difficulty with reference to the other terminus. The evidence relative to the matter had been very complicated. Mr. Downes, the company's engineer, who had been in the country for a long time, strongly advised the board not to abandon the original scheme of making the terminus of the railway at Punta Brava as first contemplated, rather than to stop it on the main land at Tucacas. Their agent and the contractors and engineers of the Bolivar Railway were of a contrary opinion, and they had gone so far as to say that even if made, and the difficulties of construction were great and numerous, it would be a very costly work and practically useless. The directors in the midst of so many different opinions had felt the difficulty of deciding upon the best course of action, for of course they had no personal knowledge of these matters; they had no means of judging but by the evidence which was laid before them. They had taken the evidence of captains of ships who had been there, and who were acquainted with the respective advantages of the different ports, and indeed they had sought to exhaust every possible source of information; but after all they had felt they were not perfectly clear as to the best course to adopt. Ultimately, however, they had arrived at this conclusion, and an arrangement had been made upon this basis. They had the right to say to the Bolivar Company, make the railway to Punta Brava, and construct a pier for us there; but then they were told that even if ever constructed it would be very expensive and perfectly useless. Well, having considered the matter very long and carefully, they had come to the conclusion, notwithstanding the strong representations that had been made, and had passed a resolution to the effect that until they were satisfied that Tucacas would be adequate for all their requirements they declined to alter the original terminus, and adopt Tucacas instead of Punta Brava. Subsequently, however, upon further consideration of the *pros* and *cons* of this difficult question, the directors had resolved to modify their original intentions, and had made the following arrangements with the Bolivar Company:—The railway was to be constructed as far as Tucacas, where everything necessary for the storage and shipment of ores was to be built by and at the cost of the Bolivar—in fact, they were to do everything that was necessary to cover the extra cost this company would be put to by not having the ore shipped from Punta Brava; and that arrangement was to be tried for two years. If at the end of that time the directors found that Tucacas afforded the company all the requisite facilities of a terminus, then they would be very happy to relieve the Bolivar Company from the necessity of making the line to Punta Brava; but if they found that it would not answer their purposes, then they would exercise their right of calling upon the Bolivar Company to construct the railway to the originally contemplated terminus. (Hear, hear.)

A SHAREHOLDER asked the meaning of the item in the balance-sheet of 5000*l.* paid for sundry concessions?

The CHAIRMAN replied that the concessions there referred to were of a varied kind, and of a very valuable character. There was a concession which relieved the company of duty on the export of ores, another which relieved their men of military service, and another which relieved the company from the payment of port dues, some of which could not but be regarded as essential to working the company.

The SHAREHOLDER: They are, I presume, concessions granted by the Venezuelan Government?——The CHAIRMAN: Yes, sir.

The resolution for adopting the report was then put and carried unanimously.

The CHAIRMAN begged to move the approval of the following resolution—"The directors having explained their proposal to raise for the current expenses of the company such sum of money as may be required, not exceeding in the whole the sum of 30,000*l.*, and to secure the repayment thereof by debentures to be issued at par, repayable in five years, and carrying interest at the rate of 8 per cent. per annum, with the option to the directors of repaying them, or any of them, at any time after the first three years, and with the option to the debenture-holders of receiving in exchange for such debentures during the same period of three years the company's ordinary A shares at par for the full value of such debentures and interest to the date of exchange." The Chairman then went on to say that this resolution only mentioned generally the terms of proposition; these, however, would be more particularly specified in a circular which would be sent out to the shareholders in the course of a few days.——Mr. HEMMING seconded the resolution.

Mr. KIMBER suggested whether it would not be better to use the expression "general purposes," instead of "current expenses."——The CHAIRMAN saw no objection to the proposed alteration, which having been effected, the proposition was put and carried unanimously.

Mr. HEMMING proposed the re-election of Mr. Learoyd as a director of the company.——Mr. JAMES THOMPSON said he had very great and peculiar pleasure in seconding that resolution. They had all seen from what had been stated that day that Mr. Learoyd had lately laid the company under very great obligations to him. He had, therefore, no doubt that as shareholders they would give him their hearty and unanimous support. (Hear, hear.)——The resolution was duly carried.

The CHAIRMAN, in acknowledging his re-election, said it should be his endeavour to serve the company in the future as constantly and faithfully as in the past. He might, perhaps, without laying himself open to the charge of egotism, mention that during the past year he had been present at every board meeting with only one exception, and they had held meetings every week, and sometimes oftener. (Hear, hear.) He then proceeded to propose the re-election of Mr. Thompson, and in doing so spoke in high terms of that gentleman's continued devotion of time and labour in the service of the company.

Mr. J. ANDERSON seconded the resolution, which was put and carried.——Mr. Thompson briefly returned his thanks.

The election of the shareholder's auditor then took place. Of the two gentlemen who had been nominated—Mr. J. H. Thornton and G. T. Rait—the latter was, on the motion of Mr. WARD, elected to that position.

The CHAIRMAN said he could not allow the meeting to separate without saying that during the past year they had had a most harmonious board. They had had no differences whatever save those differences of opinion which must always exist among independent men, but which had always been moderated by the best possible feeling and perfect courtesy. The board had, moreover, been characterised by great devotion to work; the shareholders had at any rate an industrious directorate. They had all always been present, or very nearly so, at the different board meetings, which, as he had mentioned, had been very numerous during the past year. Every one of their deliberations had been characterised by the greatest possible harmony, and he did not think he should do justice to their absent secretary—absent through illness—if he omitted to say that in him the shareholders possessed a very able officer indeed. The board had never heard from any of the shareholders anything like a complaint either as to want of information or lack of courtesy in any way whatever. (Hear, hear.) The company possessed a valuable officer in Mr. Gillespie, and he hoped that they would long retain his services.

Mr. LEWIN had great pleasure in proposing a vote of thanks to the Chairman and directors for their zealous and faithful management of the company's affairs during the past months. The company, it was true, was making only slow progress, but he hoped it was good progress. (Hear, hear.)

Mr. WARD seconded the resolution, which was put and carried with acclamation.——The CHAIRMAN having briefly acknowledged the compliment, the proceedings closed.

SNOWDRIFT SILVER MINING AND REDUCTION COMPANY.

A general meeting of the shareholders was held at the offices, Finsbury-circus, on Wednesday,

The Hon. ASHLEY PONSONBY in the chair.

The notice convening the meeting was read.

The report stated that the lessees of the crushing and reduction works finding that they could not afford to pay the rent of 10*l.* per month, as mentioned in our last report, have given up their lease, but the directors do not anticipate any difficulty in again letting them early in the ensuing year. It will be remembered that a special general meeting of the company was held on Sept. 8, to consider as to remitting sufficient money to Colorado to pay off the miners' claims. The directors were enabled, with the aid of additional subscriptions from several of the shareholders, to remit 600*l.* to Mr. Foster, and the directors are happy to say that such claims are now discharged. The lessees on the Snowdrift and Daniel Peters lodes have not persevered, as the directors hoped they would have done, in the opening up of the mines. Under these circumstances it would be very desirable if money could be raised, so that the company should itself carry out the work on the Daniel Peters lode, recommended by Mr. Foster, leaving the development of the Snowdrift lode to a later period. The directors have great confidence in the Daniel Peters Mine turning out rich in depth, as it undoubtedly intersects the Dives and Pelican lodes, and also the Silver Plume lode, which are all rich. If a sum of 1000*l.* could be raised the directors would at once order the work recommended by Mr. Foster to be vigorously carried out. For this purpose a further part of the 10,000*l.* mortgage debentures could be issued. They invite the assistance of the shareholders to carry out this desirable object.

The CHAIRMAN said he was sorry the board was not in a position to congratulate the shareholders upon the success of the mine, as far as the payment of dividends was concerned. He was, however, happy to be able to state that the company was in a much better position than at the date of the last meeting; there were then judgments against the company in the courts of Colorado, at the instance of the miners, to whom was owing a considerable sum of money. The shareholders and others came forward, and sent out sufficient to clear off those judgments, and the whole of the debts had been paid with the exception of the mortgage debenture debt. They had that morning received advices of a highly satisfactory character, that the vein in the Daniel Peters shaft was from 2 to 5 in. wide. Although Mr. Foster stated that the ore was not high class, yet as it yielded 100 ozs. per ton its actual produce would be 200 ozs. per fathom. Their mill was doing very little work in consequence of the difficulty of obtaining water during the severe weather. The board wanted again to ask the shareholders for money to drive the Good Hope tunnel to the Daniel Peters Mine, which would cost about 1600*l.*, including present liabilities, and 260*l.* to the agent for salary. Silver would be raised upon tribute, but the amount realised to the company would be required for other purposes. Although the mill was not bringing them in much, still they must hope to see better things when the warmer weather came, as there was more ore being produced in that district. There were many causes operating in their favour. Wages were getting lower, consequently they secured more tributers, besides which they were more anxious to take tributes upon a sort of semi-speculation. Upon the whole, the prospects of the mine had very considerably improved, and he should have no hesitation whatever in subscribing towards the necessary additional capital for bringing it into a dividend-paying condition. He then moved that the report and balance-sheet be received and adopted.

Mr. YOUNG seconded the proposition.

The CHAIRMAN said that Mr. Old, mining engineer of Colorado, and connected with the Colorado Terrible Mine, was present as a Snowdrift shareholder, and would be glad to afford any explanations which any shareholder might desire.

A SHAREHOLDER drew attention to the amount expended upon the mine, and the value of the ore returned, and contrasted the result with what was indicated in the original prospectus.

Mr. A. MORGAN pointed out that the operations hitherto had all been deadwork, and the cost of which was properly chargeable against capital. While the mine was in the progressive stage of development it was obvious that the ore should not be set against the costs; indeed, it was quite possible that, under such circumstances, no ore might be raised. In justification of the statements made in the prospectus that the mine would become immediately profitable, he held in his hand a letter from Mr. Collom, a mining engineer, dated August, 1871, to the effect that that mine was then looking splendid, and that the vendor regretted having sold the mine to the company.

Mr. MORGAN added that no doubt that letter accurately expressed Mr. Collom's opinion of the mine as well as its condition at the time. Mr. Old would tell them that it happened now and then that very rich deposits near the surface gave place for a time to barren pieces of ground; that had been the case in Snowdrift, but when the unproductive ground had been sunk through the deposits of ore generally became larger and of more permanent value than those near the surface. Mr. Old had been at the head of one of the best mines in the district, and the shareholders could rely upon all that he stated.

The CHAIRMAN, in reply to a question, stated that the directors had taken debentures for their fees, and no cash whatever, and the solicitor in America had also taken one-half of his charges in debentures.

Mr. OLD said it was about two years since that he wrote his first report upon the property, and no one regretted more than he did that the outcome had not been better than it had been. It will be remembered that for his report he was somewhat blamed, because it did not come up to the expectations of some parties. It was thought by one particular shareholder, whom he did not see present to-day, that he (Mr. Old) had not done justice to the property. In making his estimate it was with reference to effecting a communication between the tunnel and the winze shaft then contemplated to be sunk. Fault was found with his estimate, but unfortunately there had been less ore returned than he had computed, although the connection had not been made. Consequently they did not really know what there was above them, but he did not think there was much ore there. He had distinctly stated in a subsequent report that the properties were good, containing

strong main fissure veins, and that it was absolutely necessary that deep mining should be pushed on to reach the ore in those lodes. If indications were worth anything, indications upon which mining engineers and miners based their estimates, there was no discount upon the Snowdrift and Daniel Peters Mines if proper mining were carried on by means of deep explorations. As to the result of his examination he had concluded the properties contained four zones of ore traceable under the rock, the latter being covered by debris, and they dipped from east to west. The present workings did not evince proper working, but that arose from the fact that the previous owners and the present company were naturally compelled to follow in the footsteps of the original proprietors. He had perfect confidence in the eventual success of the mine, and the same remark also applied to the Daniel Peters.

Mr. MORGAN then read the following extracts from letters received from Mr. Foster since the date of the directors' report, as follows:—Dec. 3: The lessees in the Snowdrift are rising from the level west of the tunnel to the old workings, and have now nearly made the communication; the lode shows no particular change. As soon as this connection is made they will recommence drifting west. On the Daniel Peters I believe I have now got another party to lease; they are to commence work on Monday, and are to sink the winze in the mouth of the C level to a depth of 60 ft. before drifting. To pay 25 per cent. of the gross proceeds as royalty.—Dec. 12: The lessees on the Daniel Peters are working the winze in the C level; they have a good run of ore, varying from 2 to 5 in., but I am afraid it is of rather low quality; however, the next mill run will let us know exactly what it is.

Mr. MORGAN pointed out as a most important feature that the Daniel Peters shaft, at a depth of from 300 to 800 ft., would intersect the rich veins of the Silver Plume, Pelican, Zillah, Dives, and Eagle Bird. This really was a most promising feature, and it would be perfectly suicidal not to fully develope the Daniel Peters Mine under such circumstances.

Mr. OLD said he once had charge of a mine where 250 ft. were driven without finding any ore upon the lode. He mentioned this as an instance that the present condition of Snowdrift was not an exception, but the rule—all mines must have poor ground. The mine he referred to was known as the Hercules, which, after 275 ft. had been driven, yielded ore to the value of $100,000, and after paying heavy law expenses returned to its owners a profit of something like $30,000. Hercules was about one mile from Snowdrift.

Several shareholders asked Mr. Old for his opinion upon the last letters from Mr. Foster, and particularly that portion of them which referred to the vein in Daniel Peters being from 2 to 5 in. thick of solid ore.

Mr. OLD said that 1 in. of solid ore in the Terrible Mine would pay well, and give large profits. He would take the present opportunity of bearing testimony to the vigilance and ability of Mr. Foster, and to his economy in letting contracts; but unfortunately Mr. Foster had not had the money to carry on the necessary work; under the circumstances he had done as well as he possibly could.

The motion adopting the report and accounts was put, and carried.

Upon the proposition of the CHAIRMAN, seconded by the Rev. Mr. TIPPER, it was unanimously resolved that the directors be authorised to issue the remaining mortgage debentures at such prices as they may deem expedient.

The Rev. Mr. TIPPER proposed that the directors be authorised to issue the remaining share capital upon such terms as they may deem expedient in the interest of the company.——Mr. MORGAN seconded the proposition, and in so doing strongly advocated the resolution as calculated to strengthen the position of the directors, which was put and carried.

A vote of thanks to the Chairman and directors closed the proceedings.

RICA GOLD MINING COMPANY.

A general meeting of shareholders was held at the offices, Winchester House, on Tuesday,—Mr. ALFRED COBBETT in the chair.

Mr. SYDNEY A. COBBETT (the secretary) read the notice convening the meeting.

The report of the directors (which appeared in last week's Journal) was taken as read.

The CHAIRMAN said the meeting had been delayed some little time, the directors having hoped to be able to give the shareholders a more distinct report upon the proposed new water-supply. The mail which should have been in by this time had not yet arrived, but as soon as the report expected by it had been considered by the directors a meeting of the shareholders would be called. The board regretted they were unable to present a more satisfactory report upon the operations of the company; from time to time they had given to the shareholders every information received, and, therefore, they were in full possession of all the facts bearing upon the case. The report touched upon all points pertaining to the operations, and gave very full particulars, and, therefore, he had little to say, except to make a few comments upon them. They had not avoided the difficulties in which the company was placed, but at once stated all the original circumstances belonging to it, and to work it out to its conclusion—that is, the necessity of having water to work the rich auriferous gravel which they knew the company possessed. They stated in the report that—

Relying on the original reports made by Mr. W. S. Welton and Mr. G. B. O'Reilly as to the water-supply obtainable, which were confirmed by the company's superintendent, Mr. Clarke, who reported in July, 1872, with reference thereto, "there is sufficient to make it a fine paying property," the directors stated in their last annual report that "there appears to be no doubt but that in ordinary seasons a full head of water can be always obtained." As soon, however, as the test of actual washing was brought to bear upon the property it became evident that the calculations of those gentlemen as to the water-supply were erroneous, and that the auriferous deposit, although everything that could be desired, both as to richness and extent, became comparatively valueless on account of the insufficiency of the water-supply.

Mr. Clarke, in his letter, gave them data upon which they formed their opinion. Before Mr. Clark wrote that report he had seen the Malpaso Mine, and his report was of a very satisfactory character. The particulars he gave by the succeeding mail only confirmed more strongly their notion of the property—so that they based their opinion upon this, that the Rica property would give them large paying returns. That relieved the directors from anything that might be said against them of not having taken sufficient steps to ascertain the value of the property and the facilities it had for working. As stated in the report, these facts were placed before the proprietors in a circular dated Feb. 10. The disappointment with regard to the water-supply was impressed upon Mr. Welton from time to time, and the attention of the vendors was also drawn to the fact. The vendors undertook to make a reservoir, which would increase the supply of the water; there was plenty of water, but at the head of the ditch it filtered through the ground through which the ditch was carried, which was for five or six miles long. It was difficult for persons not thoroughly conservant with surveying to see where and how the deficiency could be remedied; and it was only in the last year that Mr. Welton had discovered the really effectual mode of bringing the water from distant parts of the country, by which he would be able to overcome all difficulties. So that in the reports they were now expecting any calculations made might be entirely relied upon. Mr. Clarke, having completed his engagement with the Malpaso Company, had returned to California. Mr. Clarke had also acted for the Rica Company; finding they were not receiving much advantage from his superintendence, they closed the arrangement with him; about six months before he left Colombia he had been no charge upon them. The directors had printed the explanations from Mr. Welton, which gave the causes upon which the erroneous estimates had been made as to the quantity of water—neither Mr. Clarke nor Mr. Welton then knew really what quantity a "miners' inch" of water was, and it was very easy to conceive how a misconception could arise when they saw the body of water in one portion of the ditch only. The result was they had not got the water, although by all the reports, as well as by the results realised, as compared with Sweetland Creek, it was clear they had got a very rich deposit. Therefore, the board had no hesitation in saying that, however unsuccessful the company had been in their operations up to the present time, there was great hope for the future when a proper supply of water shall have been obtained. Considering that the actual results hitherto obtained fully confirmed all that had from time to time been stated as to the richness of the gravel deposit, it seemed clearly established that with a moderate and continuous head of water very large profits may be realised. The report of Mr. Skinner, the present superintendent, contained several very important points, as showing, in the first place, that the gravel was extremely rich, and, in the next, there were ample outlets for the refuse, the fall being no less than 300 ft. Knowing that additional water could be obtained, the directors had in their report stated that more funds would be required. It was, however, proposed to defer raising those funds until the Malpaso property had begun to make the large returns anticipated. Whenever the money required is raised the funds then at command would enable them to push the matter forward, but he should be unwilling to do anything further if he were not fully satisfied that they could have a continuous water-supply; but—and he (the Chairman) spoke as the mouthpiece of the board—if there was the prospect of obtaining a good water-supply he should have no hesitation at all in subscribing considerably towards obtaining the necessary additional funds. On the other hand, if there was not the possibility of obtaining a large supply of water they must do the best they could under the present circumstances; at the present time the expenses were very moderate indeed. The accounts showed that they had spent more money than had been apportioned to bring the mine into working order—the excess had been about 3000*l.*; they could not say anything as to the additional expenditure required until they had the report from Mr. Welton. The item in the accounts for bills payable was for drafts drawn on the other side to carry on the works, Mr. Welton had so much in hand of the last draft to pay for the minor expenses at the mines. The item of loan from the Central Bank was for money obtained after the whole of the capital had been expended, and for which the directors had given their guarantee for 1500*l.*; there was 1000*l.* put down for directors' remuneration, and 250*l.* for one year's salary to the secretary, the latter item including the whole of the office expenses, &c.; there was also a small amount which Mr. Rogers had personally advanced. When they came to consider as to the future of the company the directors did not propose to take their remuneration, nor did he suppose they would do so until satisfactory profits and dividends were being earned. He then proposed the adoption of the report and balance-sheet.——Mr. PEARSON seconded the proposition.

A SHAREHOLDER asked if the supply of water to the Malpaso would be any detriment to the Rica?——Mr. ROGERS explained that the supply was taken from entirely different sources, and had no connection whatever with each other.

The report and balance-sheet were unanimously adopted. Messrs. Barrow and H. Drake were re-elected directors. Mr. L. H. Evans was re-appointed auditor.

Mr. THOMPSON, jun., proposed that the best thanks of the shareholders be given to the Chairman and directors, who, in addition to their already large holding, had shown their confidence in the company by becoming personal guarantees for 1500*l.* As soon as Malpaso began to yield profitable results they had a guarantee of the success of Rica.

The motion having been duly seconded was put and carried unanimously.

The CHAIRMAN having acknowledged the vote on behalf of his co-directors and himself, stated that he hoped the next time he had the pleasure of addressing the shareholders it would be to submit well-matured plans for obtaining an ample and continuous supply of water.——The meeting then separated.

MALPASO GOLD WASHING COMPANY.

A general meeting of shareholders was held at the offices, Winchester House, on Tuesday,—Mr. ALFRED COBBETT in the chair.

Mr. SYDNEY A. COBBETT (the secretary) read the notice convening the meeting. The report of the directors (which appeared in last week's Journal) was taken as read.

The CHAIRMAN said that the report set forth the whole bearing of the operations of the company. It stated that the preliminary work of running a cut up to the main bank had been accomplished, and that a permanent supply of water had, for the first time in their history, been brought on to the mine. This work being complete, they hoped now to begin to realise the large profit expected at the starting of the company. The amount expended had been very considerable. The map showed the extent of the work, and from measurement it would be found that from 1200 to 1500 feet had been cut through. There were now 250 ft. of bank above the working to operate on; this would show, if the gold was there, that there would be a large amount of ground which might be worked for years henceforward, and from which considerable profits would be realised. The board thought important results would be forthwith obtained, and for this reason they the more regretted the non-arrival of the mail in time for this meeting, because it would have put them in possession of the result of the operations at the latest date. The accounts made up in Colombia to Aug. 31, and in London to Dec. 8, showed that the amount expended since the last meeting had been (less amount of gold obtained) 4308*l.*, which amount the directors proposed to write off to capital account. The returns have been 483 ozs. of gold, realising 1835*l.*; this had been obtained from 1446 hours' washing on pay dirt, with an average head of water of 218 inches. During the period embraced by these accounts the work had continued to be of an entirely intermittent character, the new water supply having only become available on Sept. 12. They were now working 400 or 500 inches of water through the whole of the ditch, supplied by a large quantity of water running from the Medina into the Cantarera river, hence they might expect henceforward considerable returns. At the last meeting it was determined to raise additional funds for the purpose of bringing on a permanent water supply, and an issue of 10,000*l.* in preference shares was subsequently authorised. Of this issue 7500 shares were subscribed. It was not proposed to issue the balance until they had actually tested with the means now at command the gold contents of the banks before them, a resolve he thought the shareholders would consider a prudent one—that is to say, to test the present banks, and if the gold contents were as satisfactory as they had every reason to believe, then to outlay the larger sum to bring in this new ditch, carrying 1000 to 1500 inches of water, which would enable them to tear down those banks at a tremendous rate. If the results were successful there would be no difficulty at all in placing the remainder of the shares, which would enable them to complete the operations. Mr. Clarke, having completed his engagement, had left; since then Mr. Welton had kindly undertaken the superintendence, and all the works were under his control, but if, in case he should leave the country, the directors had, after mature consideration, selected Mr. Druitt, who had been introduced by an influential shareholder. Mr. Druitt had just arrived there; he was eminently fitted for such a position by his previous pursuits, and was accustomed to surveying. He (the Chairman) believed that in Mr. Druitt they had a man who would fulfil all their wishes with respect to the management. Mr. Welton's report upon the mine and ditch, and all information which came to their knowledge from persons on the spot, as well as from those who had returned to England, gave them every hope that the anticipations formed at the commencement of the company would be realised; but if they should not be, the board could in no manner blame themselves. Every means had been taken to have everything properly and fairly done, and the shareholders had had every information received; and they still had the same confidence as at the outset that large returns and profits would be realised. He then moved that the report and accounts be received and adopted.——Mr. STEELE seconded the proposition, and enquired what time it would take to complete the new ditch.

The CHAIRMAN said that they were not going on with it at present, but from the time of commencement it would probably take six months to complete—the line had been run out and an embankment made.

Mr. PECHEY (a director) said there was no fear of the ditch being injured by the tropical rains, for the Malabar ditch had not been stopped for 24 hours, although carrying 1500 in. of water, and subject to the most violent of tropical rains. They had taken out $2000 in one month in running the cut.

Mr. SNELL drew attention to the items of calls unpaid and bills payable.

The CHAIRMAN said the calls unpaid were upon the call made payable only on Oct. 19. The bills payable were for drafts against the company, and not yet due—drafts drawn to provide the means for carrying on the company out there.

Mr. SNELL supposed if it were determined to issue the 2500 shares the shareholders would have the option of taking them.——The CHAIRMAN: Certainly, but he hoped it would not be necessary to issue them, but if issued he thought they should be offered *pro rata* to those shareholders who took the others. (Hear, hear.)

A SHAREHOLDER asked if Mr. Welton intended to leave Colombia?

The CHAIRMAN said as one of the vendors holding 10,000 shares Mr. Welton had a very strong interest in not leaving till he had made the property a success.

Mr. ROGERS (a director) said he knew it to be a fact that Mr. Welton had determined not to leave until he had made Malpaso pay.

The notice adopting the report and accounts was put and carried unanimously. Messrs. R. B. Barrow and J. T. P. Pechey were re-elected directors. Mr. L. H. Evans was re-appointed auditor.

Mr. THOMPSON, jun., proposed that the best thanks of the shareholders be given to the directors for their able management of the company's affairs.——Mr. STEELE seconded the proposition, which was put and carried.

The CHAIRMAN having acknowledged the vote hoped the next time they met they would be able to show they were beginning to reap the results of their labour.

The meeting then separated.

MEDLYN MOOR MINING COMPANY.

A general meeting of shareholders was held at the offices, Gresham Buildings, Basinghall-street, on Thursday,

Mr. E. HILTON in the chair.

Mr. GRANVILLE SHARP (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed. The accounts made up to Dec. 26 showed a debit balance of 540*l.*

The report was then read.

Capt. ROWE said that he was thoroughly satisfied the mine would prove to be profitable with a fair price for tin—that is, when it had been got into working order. The general opinion in Cornwall was that the prospects for tin during the next year were most favourable, and that they would have a much better price for it; while, on the other hand, they were generally looking for a lower price for coals.

The CHAIRMAN asked Capt. Rowe when he calculated to begin to return tin?

Capt. ROWE said it would be the end of April before the engine was got to work; tin could then be returned from one of the lodes at once, but it would be two or three months before the others were reached, and each of them was more or less productive. These lodes could be reached from the engine-shaft, and for the development of these the engine was being erected. But there were others which had been extensively worked in the neighbouring mines.

Mr. JOSIAH HITCHINS supposed that the reason Capt. Rowe had placed the engine where he had was because it was the most central position, and could command the most promising lodes.——Capt. ROWE said that was the most central point for working the north and south lodes. The engine would put the shaft down 30 or 40 fathoms.——The accounts were passed and allowed, and with the report were ordered to be entered on the minutes. A call of 3*s.* per share was made. Mr. E. Hilton and A. R. Thomas were appointed the committee of management.

A vote of thanks to the Chairman closed the proceedings.

SOUTH CARADON MINING COMPANY.

A general meeting of shareholders was held at the mine, on Tuesday (Mr. RICHARD HAWKE in the chair), when the accounts for the eight, ninth, and tenth months showed a profit of 1231*l.* 5*s.* 3*d.* A dividend of 1024*l.* (2*l.* per share) was declared, and the balance of 3354*l.* 15*s.* 3*d.* carried to the credit of next account. The following report was read to the meeting:—

Dec. 29.—I am pleased in being able to inform you our mine is still in a prosperous state, enabling us to return large quantities of rich ores; and I see no reason to doubt a continuance. We are engaged in sinking three of our engine-shafts as fast as the nature of the ground will admit, and in all places where we think there is a chance of success, which mode we consider cannot fail to maintain the permanent and profitable character of the mine. You will perceive in addition to the 2*l.* dividend we have made a profit of 207*l.*, which is reserved for the purpose of liquidating the amount we shall have to pay in consequence of the appeal against the mines being rated to the poor having been decided against us.—J. HOLMAN.

NANGILES MINING COMPANY.

A general meeting of shareholders was held at the offices, Gresham Buildings, on Thursday,—Mr. E. HILTON in the chair.

Mr. GRANVILLE SHARP (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed.

A statement of accounts from Aug. 20 to Dec. 21 showed a debit balance of 401*l.* The report was read.

The SECRETARY, in reply to questions, stated that the unpaid calls amounted to 428*l.*

Mr. DAVIS asked if the accounts were audited?——The SECRETARY said they were audited by the committee, besides which each shareholder had the power and right to be his own auditor.

Mr. DAVIS (a member of the committee) said he had been through the books, and examined each item both of expenditure and receipt.

Mr. DAVIS could not see the use of going on with constantly buoyed-up expectations which were never realised. It became a question whether fairly to themselves and the public the affairs should not be closed. As honest men they should look their position in the face.

Capt. ROWE said they had never been in a position to explore the lodes from which important results were to have been obtained. They had been prevented from doing this by the influx of water caused by the stoppage of the neighbouring mines. There was, however, still one point which he should like to see proved—the cutting of the Clifford lode, which had given such rich copper in the old Clifford Mines. That point would be reached in about 10 fathoms further driving, which would take about two months, the result would determine whether or not the mine was worth further prosecution; if that were a failure he should say they should abandon those workings.

Mr. DAVIS asked whether any practical opinion had been given on the mine besides that of Capt. Rowe?

The SECRETARY said that a mining engineer from the North of England had inspected the mine on behalf of the executor of a very large shareholder, and Capt. Rowe would tell them the opinion given.

Capt. ROWE said that the opinion of the agent referred to was expressed in the following words:—"If I could not get the money in any other way to work such a piece of ground I would stand at the church door and beg it."

Mr. CREAK said it was a very good thing that gentlemen did not do so.

Mr. DAVIS said that such an opinion, and expressed in such a way, did not give him (Mr. Davis) a very high opinion of the man.

After some further discussion, the accounts were passed and allowed, and with the report were ordered to be entered upon the minutes.

The SECRETARY, upon the question of call, stated in reply to a question that he calculated at least 50 per cent. of the amount due upon relinquished and forfeited shares would be recovered.

Upon the proposition of Mr. DAVIS, seconded by Mr. CREAK, a call of 4*s.* per share was made.

The SECRETARY, in reply to a question, stated that at the date of the last meeting there were 2685 shares extant, but the number now was 2524, the difference being the number of shares that had been relinquished in the interim.

A special meeting was then held to take into consideration the advisability of erecting sulphuric acid works upon the mine.

The report of Dr. Oxland (of Plymouth), a copy of which had previously been forwarded to each shareholder, was submitted.

The CHAIRMAN said there appeared to be opening out a new era in Cornwall with regard to the chemical products of the various minerals, and the object of the present meeting was, as indicated in the notice, to consider the desirability of utilising their sulphur-mundic by the manufacture of vitriol, which it was believed could be done with very considerable profit to the shareholders.

After some discussion, it was agreed that the committee of management should take the necessary steps to confirm or otherwise the opinion of Dr. Oxland upon the subject. The meeting was accordingly adjourned.

SOUTH ROSKEAR TIN AND COPPER MINING COMPANY.

A general meeting of adventurers was held at Glasgow, on Dec. 18,

Mr. G. STEWART ANDERSON in the chair.

Mr. T. CURRIE GREGORY (the secretary) read the notice convening the meeting, and the minutes of the preceding one having been confirmed, the statement of accounts for the sixteen weeks ending Sept. 5, and showing a debit balance of 3425*l.* 0*s.* 4*d.*, was submitted.

The directors had pleasure in submitting the agents' report, which was very full and hopeful. The meeting had been delayed so that the agents might be able to report the result of their inspection of the 102 fm. level in Pendarves shaft; but, owing to the crooked state of Dunkin's shaft, breakages have occurred, which have retarded the work. The water is drained to within a few feet of the bottom of the level, and in a few days they hope to be able to examine it. It is satisfactory, however, to be informed by the agents that at the 60, 80, and 90 fm. levels the state of the mine is found to be very much as was expected, and that much valuable tin ground is there to be broken, and the stulls full of good stamping stuff. Every week they consider gives greater reason to believe that the information of the condition of the mine under water gathered at the outset will be realised, and that ere many months have passed you will find that you have a good mine. During the last four months the stamps have not been worked, for the sake of economy, but your agents expect to resume stamping early in the year, with every prospect of being able to make considerable sales of tin. From the discoveries being made employment is likely ere long to be found for the whole of the stamps, and they have now good reason to be pleased that they acquired the engine, stamps, and floors of North Roskear Mine for the small sum of 2100*l.* The directors regret that the clearing of the mine has cost so much, and that a further call of 10*s.* per share is necessary for the prosecution of the works; but they feel that, all things considered, the shareholders have every encouragement to support the undertaking with the hope now of speedy success.

Capts. Wm. Skewis, John Brenton, and James Hosking reported upon the various points of operation. They are now taking out ground for the erection of the two arsenic-kilns, and propose to roast such orestuff as contains a sufficient quantity of arsenic before sending it to the stamps; they will thus make it more easily stamped, and get a handsome profit from the arsenic soot. Having required the whim almost exclusively for pumping since the last meeting, they have not been able to draw tinstuff for the stamps; but some of the tributers have sent up a little, making, with the quantity picked from the burrows, about 4 tons of black tin, of which 2½ tons is now in stock unstamped. They are satisfied from the character and position of the tin in the burrows at Gregory's that the principal tin-producing ground at this part of the mine has not yet been drained. The appearances at Pendarves shaft so far, to a great extent, confirm the good reports which they had received about the mine, and, although they expect much from the run of tin ground at Vivian's, they believe the principal runs of tin ground in the mine will be found in the neighbourhood of Dunkin's; everthing seems to point to this, and, on the whole, they were never more hopeful of ultimately bringing this great property into a remunerative state than at present. If they can drain the 102 in a week or so, and take up the water at the 70, they will return tin, &c., enough to go far towards paying the costs in the next four months.

The reports and accounts were adopted, the committee were re-elected, and a call of 10*s.* per share made; and, thanks having been voted to the Chairman, the proceedings terminated.

DRAKE WALLS MINING COMPANY.

The general meeting of shareholders was held at Glasgow, Dec. 18,

Mr. G. STEWART ANDERSON in the chair.

Mr. T. CURRIE GREGORY (the secretary) read the notice convening the meeting, and the minutes of the preceding one having been confirmed, the statement of accounts to Aug. 29, showing a debit balance of 2755*l.* 10*s.* 2*d.*, was submitted. The company has the sum of 1739*l.* 5*s.* 4*d.* available cash, and 1650*l.* represented by 330 unsold shares of 5*l.* each, to meet 4494*l.* 15*s.* 6*d.* due to merchants, so that the liabilities exceed the assets by 1114*l.* 14*s.* 8*d.* About one-half of the expenditure is charged as working cost, and the remainder to construction.

The directors reported that owing to scarcity of water during the summer the stamps were not at work for more than twelve hours a day for a large portion of the four months, otherwise the sales of tin would have been a good deal larger. Two large reservoirs are now being made to prevent stoppage in future. The directors, seeing that an addition to the number of stamps would materially increase the sales, and having a quantity of old materials in hand to go to meet the greater part of the cost, ordered 24 more heads towards the completion of the 102, as at first intended, to be erected, and a calciner built. The tin market has not improved, and it is unnecessary for the directors to remind the shareholders what would have been the result of the operations if tin had maintained the same price it stood at when operations were commenced, which was 26*l.* per ton higher. Whilst the revenue account shows a profit, the total balance-sheet shows a deficiency of 2755*l.* 10*s.* 2*d.* This has been occasioned by the unforeseen difficulties that have occurred in dealing with old machinery, and repairing old shafts and levels underground. When the new stamps and calciner are completed in January increased sales of black tin will be made, and, therefore, the directors think that present wants will be met by authority for an overdraft on the City of Glasgow Bank of 2000*l.*, to be recouped out of such sales. Although the cost of construction has been greater than was anticipated, it will be satisfactory to see that the mine is opening well, and to know that since last meeting discoveries have been made which greatly increase the value of the mine. The directors are satisfied that the

great object to be attained is the completion of the 112 heads of stampe, as the supply of tinstuff is abundant, and, even at the present low price, the profits would then be handsome.

Capts. Wm. Skewis and E. Dunstan, after reporting on the various points of operation, remark that they regret to say there have been many more lets and hindrances, arising from defective machinery and bad timber, &c., in shafts, than could possibly have been conceived, and a large portion of machinery and materials which were considered available have proved so defective that they have been obliged to replace them with new. This to a great extent has been accomplished, but there are still many things more requiring to be done to work such a large and valuable property as this appears to be.

The reports and accounts were approved and adopted, the committee were re-elected, and, thanks having been voted to the Chairman, the proceedings terminated.

BRYNAMBOR LEAD MINING COMPANY.

A general meeting of shareholders was held at the company's offices, Moorgate-street, on Thursday,

Mr. J. BURBIDGE in the chair.

Mr. S. JONES (the secretary) read the notice convening the meeting, and the report of the directors, with the statement of accounts, were submitted.

The directors regretted the discouraging nature of the report. The cash at bankers and in hand was 8*l.* 11s. 7d., and the trustees have taken possession of and hold the property on behalf of the debenture-holders. Of the 2000*l.* additional capital sought to be raised at the last annual meeting only 30 shares were subscribed for, besides the one-third which Mr. Gillman had taken. Of the 3000*l.* debenture bonds created in May last only 190*l.* worth were subscribed for beyond those taken by the directors; the total issue was 1030*l.* The late and former auditor (Messrs. Wm. Brooks and George Emdin, the former a creditor for 7*l.* 17s. 6d. fees) presented a petition to wind-up the company. Mr. Gillman having removed to Norfolk has resigned, and Messrs. Heseltine, Plant, and Burbidge placed their resignation in the hands of the shareholders.

The CHAIRMAN remarked that the position of the company had been anything but a pleasant one for the directors who had given their time to it, had advanced their money, and had had an endless amount of trouble. The two auditors had, as he considered, acted in a most reprehensible manner towards the company. Mr. Emdin was appointed auditor on condition that he should subscribe for or place 50 shares, yet he only took 20, and obtained two subscriptions of five shares each, which had been since forfeited for non-payment of calls. He never took the remaining 20 shares, and at the next general meeting he was quietly dropped out, not, however, before a sum of 15*l.* 15s. had upon his (the Chairman's) proposition been voted to the two auditors. Mr. Emdin commenced an action for his share of the fees. As to Mr. Brooks, the other auditor, he must explain that Mr. Brooks had said that he could place any number of shares, provided amongst other things that they should expend a large amount of money, he having a good connection, and that he should be appointed auditor. He (the Chairman) was glad to say that he prevented the expenditure of a large amount of the money which would have been expended had Mr. Brooks' views been adopted, for the shareholders would be surprised to know that after putting the company to great expense he placed only 5*l.* worth of shares, and he, therefore, asked whether he got the appointment of auditor on fair conditions? The last general meeting voted Mr. Brooks 7*l.* 17s. 6d. for remuneration; but, as the shareholders knew, the company was hard up, and the fee was not paid. Mr. Brooks commenced an action in the Lord Mayor's Court, which was not defended, and he then attempted to put an execution into the offices they were now in (although he knew they were Mr. Burbidge's and not the company's offices); and immediately afterwards he presented a petition to wind-up the company, and the Master of the Rolls granted the order, and the result was that the company had had to pay 46*l.* The directors felt that, considering this conduct, they could not present the accounts to Mr. Brooks to audit, and that the shareholders would prefer appointing an auditor at this meeting, and adjourning for a few days to get his report.—Mr. A. GRAY enquired what had recently been doing at the mine?

The CHAIRMAN said but little had been done at the mine since July last. The trustees of the debenture-holders had been in possession since July; and he, with Messrs. Thompson, Williams, and Heseltine, had been obliged to find money to keep the concern going. The mine is down 36 fms. from adit, and the adit is about 11 fms. from surface.—Mr. EDWARDS imagined Mr. Gray would like to know how the mine looked when stopped.

The CHAIRMAN said it was looking well. The mine was now perfectly equipped, so that the money now required to be raised would all go to working the mine.

A SHAREHOLDER enquired the total amount of debts?—The CHAIRMAN said that they could arrange all by debenture except about 250*l.*

Mr. GRAY considered that at least 1000*l.* was required to carry on the mine properly, and if it were made a condition that no allotment should be made without that amount were subscribed he would take his *pro rata* proportion. If 2000*l.* were subscribed he would take his proportion of the larger amount with still greater willingness. He objected to the issue of debentures, which was really cutting the throats of the original shareholders.

Mr. H. H. THOMPSON felt the force of what Mr. Gray had been saying, and, like him, was opposed to debenture bonds; but the directors were convinced that money could not be raised in any other way. He had felt disappointed that no profits had been realised, but firmly believed that the mine would long since have produced lead had they had capital to develope it. He believed that in another 20 fms sinking they ought to find a rich lode. He had thorough confidence in the mine, and they should all pull together to find the money.

Mr. EMDIN declared that the amounts due upon the ten shares he had placed had been duly paid.

The CHAIRMAN said the books of the company showed the contrary.

The meeting was then adjourned until Jan. 11, at 1 o'clock, to allow time for the audit of the accounts, and Mr. B. M. Moss was appointed to make the audit.

It was arranged to leave over the questions of adopting the report and electing directors until the adjourned meeting, the proceedings terminating with the usual complimentary vote of thanks to the Chairman.

LLANARMON MINING COMPANY.

A general meeting of shareholders in this company was held at Finsbury-square Buildings, on Thursday,

Mr. JOSEPH MORRELL in the chair.

The notice convening the meeting having been read, the statement of accounts ending August, 1874, together with the directors' and agents' reports, were received and adopted.

MANAGER'S REPORT.

The new engine-shaft has been sunk 12 fms. below the 66 fathom level, the last length being hard, solid limestone rock; the shaft being very wet, and not having any branches, strings, or any advantage, made the sinking very slow and expensive; but at this point, which is 78 fms. from surface, we are pleased to discover a cross-joint, and north and south vein, 15 in. wide, containing congenial stone and spar for producing ore, and also letting out a quantity of water. We at once ceased sinking, and having attained the required depth we put the men to drive a cross-cut north, in the direction of the main lode. We are glad to inform you that the 3 fms. which have been extended on the course look promising, and it is the general opinion of those who understand the nature of the ground that good deposits of lead ore will be found at the junction—*i.e.*, where the two veins come together, and being now down in the proper bearing measures, as well as in ground of the same character as seen in the cross-branch west of the junction at the engine-shaft previous to its intersecting the main lode, which afterwards produced 200 tons of ore per month, there is scarcely a doubt of meeting with success directly the lode is intersected, which will be in 12 fms. more driving, and we would strongly advise you to push this cross-cut forward with all possible speed. The shaft has been cased and divided to bottom, and a ladder-way put in, with all necessary stages. The pitwork is complete, and in good order. In conclusion, you will bear in mind that the water charges are light in this part of the district, as compared with other parts of Denbighshire and Flintshire, which is a great feature to be considered.—WILLIAM CLEMENCE.

DIRECTORS' REPORT.

Your directors in their last annual report urged upon the shareholders the importance of taking up the unallotted shares at par, 2*l.* each, so that the works might be carried on with the energy that is imperatively demanded for economical working. Your directors regret that this appeal was very inadequately responded to, applications having been received for only 160 shares, consequently the funds necessary to continue the operations had to be provided by the secretaries, which they have done to the utmost of their power. The operations at new shaft having been unavoidably suspended during the preceding three months for want of capital, your directors (feeling the importance of the works being resumed without delay) authorised the secretaries, on Oct. 7 last, to issue a circular to the shareholders, offering the balance of the shares of the company (2*l.* paid up) at 1*l.* per share. This step was agreed to after due consideration, your directors feeling that those shareholders who were willing to embark the further sum necessary to prove the Nant lode should have some advantage over those who might refuse; and feeling, also, that no shareholder could do otherwise than approve of such a course—even though to some it might be inconvenient to advance any further capital—seeing that the advantage was offered to all. It appears, however, that both the object in view and the advantage offered have been misunderstood, this appeal having met with as little response as the former. The progress made during the past year has been inconsiderable, but had the policy of your directors been supported by the shareholders the Great Nant lode would, there is every reason to believe, have been long ere this intersected, and a lasting and most profitable mine opened up. This, however, could not be done without capital, and your directors hope that at the meeting called for Dec. 31 the shareholders will not only see reason to approve of the proposed issue of shares, but that they will evince their approval by at once taking their respective proportions of them, otherwise the mine will have to be wound up, and others will reap the advantage which the shareholders have waited for, have so nearly paid for, and have apparently almost within their grasp.

The operations at the mine have been carried on with economy and judgment, of which the shareholders would be fully assured if they would examine for themselves or by some competent agent. Your directors have, since the last annual meeting, considerably curtailed the expenses of the mine. The manager and the purser have been dispensed with, and the entire management has been placed in the hands of Mr. Clemence, whose practical knowledge of the property, and of the district, will be of material benefit to the company. The progress made, the amount of work done, and the prospects of success are set forth in the manager's report, which accompanies this. Your directors with deep regret have to announce the lamented decease of their respected colleague, Mr. William Carpenter, which took place on April 21. Mr. Joseph Morrell, a gentleman who has considerable interest in the company, has signified his willingness to be a candidate for the vacancy in the directorate thereby occasioned, and your directors have much pleasure in recommending the election of that gentleman.

The CHAIRMAN stated that all present were aware of the position the directors were placed in, owing to the exhaustion of the funds for the working of the property. Every inducement had been held out for the disposal of the unissued shares; but, as would be seen by the report of the directors, with but a very poor response. It is, therefore, for the meeting to decide how the 500*l.* which is necessary to prove the Nant lode should be found. He, as a large shareholder, did not feel disposed to let the mine stop for such a small amount. He had visited the property, and after careful enquiries believed that it would eventually prove a very remunerative one; he hoped, therefore, that something would be suggested and adopted to raise the necessary capital to thoroughly develope the Nant lode.

Mr. MILFORD (a director) said that he had received several letters from large shareholders suggesting different modes of obtaining the 500*l.*; but he would recommend that debenture notes should be issued bearing a preferential dividend of 20 per cent.

After a lengthy discussion, the following resolution was adopted unanimously:—"Messrs. Bartlett and Chapman having agreed to their claim of 78*l.* standing over until the Nant lode has been intersected, it is resolved that the directors be empowered to issue 500*l.* in debentures, bearing a preferential dividend of 20 per cent., such issue to be in 100 bonds of 5*l.* each, and the proceeds to be applied solely for the exploration of the mine.

Mr. MILFORD expressed, on behalf of himself and colleague, their deep sorrow at the great loss the company had sustained in the decease of their most valued and respected friend, Mr. William Carpenter, a gentleman who had taken a great deal of interest in the company's affairs since its commencement. The vacancy occasioned thereby he would recommend to be filled up by Mr. Joseph Morrell, who held a considerable number of shares. He would, therefore, propose that gentleman, which, having been seconded, was agreed to.

Mr. Lawrence was re-elected auditor.

The Rev. J. BAILLIE said that he could not allow the present opportunity to pass without proposing a vote of thanks to the secretaries, Messrs. Bartlett and Chapman, for their kindness in allowing the claim they have against the company to stand over until the lode was proved, and also for their attention to the company's affairs generally.—The resolution, having been seconded by Colonel MORTON, was agreed to.

Mr. CHAPMAN, on behalf of Mr. Bartlett and himself, thanked those present for their kind expressions, and he could assure them that he had but one thought, which was to do everything he could for the welfare of the company. He held a large interest, and felt satisfied that the 500*l.* agreed to be raised that day would be sufficient to recoup all for their outlay.

A vote of thanks to the Chairman terminated the proceedings.

Before the meeting separated 310*l.* out of the 500*l.* was subscribed.

GREAT CARADON.—At the meeting of shareholders on Wednesday (Mr. R. H. Silversides,—the late chairman, Lieut.-Col. W. T. Nicholls, having died on Christmas morning,—in the chair), the accounts from June 11 to Nov. 28, showing a debit balance of 83*l.* 11s. 5d., were adopted. The outstanding liabilities amounted to 522*l.* 11s. 3d., the principal assets being arrears of calls, 401*l.* 13s.; and cash at bank, 36*l.* 13s. 7d. The Secretary (Mr. Granville Sharp) then read the report of Capt. W. Taylor, which stated that the mine had been drained to the 70, and operations since had been confined to the driving west on the main lode, which was, no doubt, a continuation of one of the most productive lodes of the Caradon Mine. It had a strong appearance, and was from 4 to 5 ft. wide, composed chiefly of mundic, blende, and yellow copper ore. The ground about it was a beautiful killas, congenial for mineral, and the whole appearance led to the expectation that profits would result when properly explored. If a large lode of this character struck into ore it would soon repay outlay. The engine and pitwork were in good working order, and quite ample to prove the mine to any extent in this direction.—The Secretary thought it most important that they should prove this lode; it had been neglected for four years, but if they had not sunk the shaft to the 90 they would have been able to explore the 70, and there was no knowing what would have been the result.—The Chairman said the 70 should, no doubt, have been explored, but eventually the sinking of the shaft might not prove to be a waste of money.—The report and accounts having been passed, the proceedings terminated with a vote of thanks to the Chairman.

POLROSE MINE (Breage).—A quarterly meeting of adventurers in this young undertaking was held at the mine on Tuesday, the 8th inst. The accounts, which comprised four months' working of four weeks each, showed—Labour cost, 1237*l.* 11s. 9d.; merchants' bills, 303*l.* 1s. 10d.: total cost for four months, 1540*l.* 13s. 7d., and returns from the sale of 22 tons 0 cwts. 3 qrs. of tin, 1193*l.* 11s. 1d.—without any assistance towards cost from either the 50 or 60 fm. levels, points which it was expected would be made available within a very few weeks from the day of the meeting, and from which very favourable results were looked for. The Margaret lode was cut at 60 fms. depth on the morning of the meeting, and the Polrose lode, which had been lost in consequence of a heave above the 50 fm. level, was expected to be intersected at two points before the next setting day. The mine, it was stated, had returned nearly 5000*l.* worth of excellent tin ores since the operations commenced in July, 1873, and with a better price for tin would have already more than paid its way. There is every probability that by the next quarterly meeting this little mine will add a new name to the list of the dividend-paying tin mines of Cornwall, now so much curtailed of its once goodly proportions: 103 hands were employed on the underground and surface operations. Before the adventurers separated they passed a well-merited resolution of thanks to Lord Churston, for his liberality in having remitted the lords' dues during pleasure, which was supposed to signify until the mine had turned itself round. Lord Churston has set an excellent example in this to Cornish lords, and it is very clear that such liberality will entail no loss upon the lord in the long run—*si sic omnes*.

OLD TALARGOCH LEAD MINING COMPANY.—The statutory meeting of shareholders was held on Wednesday, Dec. 23, in the offices at the mine, near Rhyl (Mr. P. Ellis Eyton, M.P., in the chair). At the request of the Chairman, Capt. Wright gave an account of the position in which the company stood, intimating that 30,000*l.* of new capital had been subscribed, and that the directors had offers under consideration for new dressing-floors and new boilers, in lieu of those now in use, whereby a saving of from 300*l.* to 400*l.* per month was expected. He spoke also of the condition of the mine and its prospects. The directors were making new trials and sinking Walker's shaft, these operations being expected to result in a very much larger get of ore. The output of the mine since the acquisition of the property by the new company had ranged from 110 to 140 tons of lead ore and 2000 tons of blende per month. At the present time all the men were under tribute. He had every confidence in the mine being a success, the more so when he considered what it had done in the part, when burdened with heavy expenses, now being removed. The report was well received, and, it being intimated that the Chairman and Mr. Geddes retired by rotation from the directorate, they were re-elected; and, on the motion of Mr. Austin, seconded by Mr. Pimlow, the remuneration of the directors was fixed. A vote of thanks to the Chairman completed the proceedings.

WEST CHIVERTON.—At the quarterly meeting of adventurers, on Wednesday next, a call of 1*l.* per share will be made. The committee state that they find the financial position of the mine much more serious than they had anticipated. The lord's agent had threatened to take possession of the mine on account of 1603*l.* 6s. 9d. dues 15 months in arrear, in addition to which there are advances made by the bankers of 1600*l.* odd, and merchants accounts, &c., of about 3000*l.*, amounting in all to some 6200*l.*, which will call for prompt settlement. To save the property from utter ruin a call of 20s. per share to clear off the most pressing liabilities is proposed. If the shareholders readily respond to the call they hope by reducing cost to the minimum consistent with the efficient working of the mine they will carry it through the present difficulties, and at no distant date bring it back to a dividend-paying state. They require a call of 40s. per share to meet all liabilities, but the prospects of the mine being very encouraging they rely upon consideration from creditors, and hope in a few months with increased returns and reduced expenses to retrieve their position. As soon as the books have been investigated by an accountant the shareholders will have a full account of the result. Capt. R. Southey will attend the meeting.

[For remainder of Meetings see to-day's Journal.]

CRUSHING ORES, &c.—Mr. H. R. MARSDEN, of Leeds, has patented some improvements in machinery or apparatus for crushing ores and breaking stones, and for crushing and breaking other hard and brittle substances. The essential features of the invention consist—1. In the employment, in combination with a "jaw" crushing machine, of a rotary wheel having buckets or pockets for elevating the crushed substances into a sieve, through which the portions sufficiently reduced are discharged, the remainder being conducted again into the machine, where they are again subjected to its operation.—2. In making that portion of the jaw which forms the acting surface, and which is cast separately from the stock or frame, of chilled cast-iron, cast on to malleable or wrought-iron bars or strips, the projecting surface of which, as also the surface of the stock or frame, being subsequently planed, and the two parts fitted together and secured by wedges or other similar means. This part of the invention is also applicable to stamp-heads and other crushing machinery.

STEAM-BOILERS.—Mr. R. READHEAD, of Gateshead-upon-Tyne, has patented some improvements in steam-boilers. Three or more tubes running parallel with the sides of the boiler are placed in the water space thereof, and connected with two pipes, one at each end. The steam when raised passes through one of the pipes, and thence through the tubes into the pipe at the other end thereof, which last-mentioned pipe is connected to the steam-pipe of the engine. The water which surrounds the steam tubes absorb any latent or waste heat contained in the steam which passes through the latter, and becomes more quickly heated and converted into steam than it otherwise would have been. The steam tubes are provided with valves to prevent the steam from entering the same when desirable.

NEW COUNTER.—An improved apparatus for indicating the revolutions of screw or paddle shafts of steam-vessels, also applicable for indicating the revolutions of other machinery, has been invented by Mr. ALEXANDER WALKER, of Bow. By means of bevil gearing he transmits the motion of the propeller-shaft, or of that part of the machinery the number of whose revolutions he requires to obtain, at a corresponding rate (having regard only to the number of revolutions) to a vertical shaft, suitably supported by a bracket or otherwise, passing upwards from the propeller-shaft through the lower, middle, and upper decks, and the bridge thereon. The said vertical shaft is made in divisions or parts, which are suitably united immediately below the said decks, and each of which parts is provided with a shoulder, which rests upon a journal made in halves, and bolted in position to the deck at the part through which the said shaft passes. He utilises the motion of this shaft so as to obtain the number of its (and consequently of the propeller-shaft's) revolutions at the places required by keying small projecting teeth thereupon, one in the engine-room and one above the bridge on deck, and by causing these teeth at each revolution of the shafts each to engage with one of a suitable and convenient number (say 200) of teeth in a wheel centred by a pivot to carried by the above-mentioned bracket, and passing through the centre of a dial plate (which is also supported by the said bracket) marked with a series of numbered divisions, which are equal in number to that of the teeth upon the said wheel, and upon the end of which said pivot he makes fast and secures a suitable index finger or pointer. He thus at each of the revolutions of the propeller shaft and of the said vertical shaft causes the said toothed wheel to be moved one tooth (and the possibility of its moving more at a time is prevented by a sufficiently strong spring engaging with its teeth) and the pointer to be moved from one division of the dial plate to that next it. The said dial plate carries a case containing a train of watch or clock alarm mechanism, which gives motion to a second hand, and imparts thereto one revolution each minute of time, and which also at the commencement of each of the revolutions of the seconds hand strikes an alarum gong or bell, so that the engineer, by noticing the number of divisions of the dial plate passed over by the said pointer between two sounds of the gong or bell, can immediately ascertain the required indication.

THE GREAT COMSTOCK BONANZA.

The recent development of the Comstock bonanza has created quite an excitement in San Francisco, and a very interesting account of a visit to the place is given by a correspondent of the *San Francisco Chronicle*, who remarks that the true heart of the world-famous Comstock silver lode would seem to have been reached. As far as explored, it lies in the Consolidated Virginia, California, and Ophir claims. In all three of these mines have been developed marvellously rich bodies—wonderful masses of sulphuret and chloride ores. We have said "bodies," but there is in reality but one body—one immense bonanza, chimney, or whatever else we may choose to call it—one huge mass of ore extending all the way from the Consolidated Virginia, through the California, into the Ophir, and no one knows how much further; nor does anyone know much of its height or width, and nothing at all of its depth. As to its length we know something definite—that it extends 400 ft. through the Consolidated Virginia, and undoubtedly traverses the entire length (600 ft.) of the California, as it has been discovered in the Ophir Mine, which adjoins the California on the north. How far it extends into the Ophir ground time and the honest miner can alone determine. It is conceded, however, that the ore body cannot be less than 1200 ft. in length. The great fissure in which this huge bonanza rests appears to have expanded enormously at this particular point. Measuring across from the true west country rock to the true east country rock the distance is from 1000 to 1200 ft. In the midst of this vein matter which fills this vast fissure has formed, and is now found the huge mass of ore which runs through the three mines mentioned above. For several months the Consolidated Virginia Company have been at work in the crest of this subterranean silver mountain, the Ophir Company have been gouging into it for a shorter period of time, while the California folks have but just begun to feel their way into its western slope at two or three points. Never until lately have the Consolidated Virginia Company seemed to get fairly into the ridge of the mountain—to penetrate to a point where they could begin to see what they were working upon, although in their upper levels they opened great breadths of wonderfully rich ore.

Exploring the silver caverns we find before us, on the east side of the shaft, a spacious chamber, called the "station," and into this we walk as into a large hall. From this large chamber a tunnel leads us directly east to the main north and south drift, which is the great highway of this level of the mine, and which extends southward through the Best and Belcher into the Gould and Curry, and northward through the California into the Ophir. Crossing this principal thoroughfare of the level we continue directly east in the broad drift, which is the California cross-cut. This is not in the California ground, but is 14 ft. south of that company's south line. As the drift runs due east from the main shaft of the Consolidated Virginia Company it will be seen that said shaft is sunk just at the edge of the California ground, and, therefore, that the northern part of the hoisting works and several of the buildings of the Consolidated are over the line; however, this is all surface business. Notwithstanding that the drift of which we are speaking is 14 ft. south of the south line of the California, for all practical purposes it amounts to the same thing as though it had been run on the line, or wholly in California ground. Nature knows no such lines as are run by man, and it is safe to guess that she has not chopped off the ore just 14 ft. north of the drift. It is here in this drift that the wonderfully rich ore of which so much has of late been said was found. The ore is moderately rich where it was first out by the drift, but it rapidly grows richer, and within a few feet it becomes a mass of glittering sulphurets and pale green chloride ore. The drift has now penetrated this mass of ore—a part of the great whole—a distance of about 25 ft. Look where you may—at the bottom, the top, or the sides of the drift it is everywhere the same. The men throw down their picks, and step back while, candle in hand, you critically examine the face of the drift, just where they have a moment before been digging. You find before you the same material that you have been examining at the sides of the drift—a pale-green shade forms the ground tint, and running through this in various directions, or in places forming little nodules, is seen the black sulphuret ore, with bright points of iron and copper pyrites glittering on its surface. This ore yields an average assay of $600 per ton. It would be an easy matter to get samples of ore in this drift that would assay far up into the thousands; indeed, in taking a sample the trouble would be to avoid getting hold of this very rich ore. This is the famous drift which seems to tell the story of the fabulous wealth lying near at hand in the California.

Turning southward from the main north and south drift we reach, at a distance of 118 ft., the east cross-cut No. 2. Here has been opened a road into the silver mountain; this cross-cut leaves the main north and south drift 118 feet south of the shaft, and the California drift, therefore, is 132 feet south of the California south line. It is, or was a day or two since, 204 feet in length, and nearly all the way in exceedingly rich ore. Where we first start in upon it we are in vein matter, a mixture of porphyry and clay, with here and there ribbons of white quartz passing through the porphyry in various directions. Soon we find coming down across the drift a band of clay a few inches in width, which cuts boldly through all else, and dips to the eastward at an angle of about 45°. Right here begins the ore, and from being low grade at first it rapidly increases in value till in going a short distance it is worth over $100, and soon the car samples averaged $200, and in this kind of ore we continue to the end of the drift, where the men are seen still digging ahead in the same wonderful mass of mingled chloride and sulphuret ores. For nearly 200 feet they have been pushing eastward across the great ore body, and as yet no sign of any east wall is seen. Although the ore in this drift is not so unprecedentedly rich as is that in the California cross-cut, yet it presents the same general appearance, and is really the same character of ore. When we reflect as we stand in the end of this drift, that we are away east of the end of the California drift and 118 feet south of it, we begin to have some faint conception of the mass of ore lying between the two points. There is no need to multiply words about this drift. It is there as I have described it, and when I have said it is so many feet in a certain quality of ore, that is about all that can be said that would be of any value.

No breasting out has yet been done in the Consolidated Virginia on the 1300 ft. level. All the work that has been done has been to run a certain number of drifts and cross-cuts for the purpose of securing adequate ventilation, and for the proper opening and defining of the huge ore body. All the ore taken from the level was extracted in running the several drifts and cross-cuts. Except where pierced by these, the whole level is virgin ground. It is estimated by Mr. Deidesheimer, the well-known mining engineer and expert, that there is now standing in the Consolidated Virginia Mine, above the 1550 ft. level, $43,000,000 worth of ore, or about $27,000,000 in dividends. This is saying nothing about what is below, and, as we have seen, they already have a winze down 50 ft. below the 1550 ft. level in ore of the richest description. The great centre of interest in the vast ore body running through the three mines is at present in a little drift in the Ophir ground just at the edge of the north line of the California. In this was struck ore far surpassing in richness anything yet seen in this enormously rich body of ore. Specimens are here found that are almost pure silver, that are quite malleable, and that may be whittled with a knife, almost the same as lead. This is below the 1465 ft. level of the Ophir. In order to reach it we take the main north and south drift on the level last named and go out to the north line of the California, where there is a drift running east a distance of 60 ft. on the line. In the end of this is a winze 35 ft. in depth. From the bottom of this winze a drift has been run in a north-west direction a distance of 25 or 30 ft. in Ophir ground, and all the way in ore of the best quality.

From this north-west drift a cross-drift has been started south towards the California line. It is estimated that the ore in this little 10-ft. drift (as yet in Ophir ground) will average $1200 per ton. A specimen taken out at this point assayed over $8200. It is such ore as is nowhere else to be seen on the Comstock lode, and is far ahead of the famous California cross-cut mentioned above, situated 14 ft. within the Consolidated Virginia ground. What has here been said of the wonderful strike in the small drift below the 1465 ft. level is, of course, an account of a portion of Ophir, though it tells equally well for California. All of the ore breasts on the 1300 and 1465 ft. levels are looking better almost daily. In the 1465 ft. level are constantly observed indications of the great bonanza "making" northward, and, indeed, of its expanding in all directions. It is as though they were at work on the top of a great bonlder, which is found to stretch away in all directions as explorations are made upon and around it. In order to give your readers some idea of the quantity of ore already developed in the Ophir, I may here say that the best estimates show that there are on the 1300 and 1465 ft. level not less than 150,000 tons of ore opened up and in sight. At present the Ophir Company are extracting ore at the rate of 240 tons per day, keeping four mills in operation, but they could very easily increase the amount if it were necessary.

There can be no doubt that the ore now being opened in the three mines under consideration is the largest and richest the world ever saw. In the California the width will doubtless prove to be immense; just how wide it may be found no one can say, and the experts themselves fear to risk an opinion, but they hint at all the way from 200 to 400 feet. The length, as we all know, is 600 feet. A cross-cut for the vein has also been started from the main north and south drift of the 1400 ft. level of the California, and is being advanced in promising vein matter. Soon we shall know something about the width of the deposit on this and the 1500. From the developments now being made at each end of the mine we up here are beginning to fear that somewhere near the centre it will be found to be but a solid mountain mass of pure silver.

THE INVESTMENT MARKET.—In their current monthly circular Messrs. Pim, Vaughan, and Co., stock and share brokers, of Throgmorton-street, report that there has been an absence of business and feature in miscellaneous securities, bank shares being in good demand throughout the year, and, in most cases, improving in value. Submarine telegraphs have barely maintained their position: the most serious fall has been in Anglo, on the completion of the Direct United States Cable. Gas shares show a very handsome rise, on the probability of their being absorbed by the Board of Works and Corporation of London. Insurance are dull, especially Marine, on the heavy losses by late series of disasters. A quiet business is done in English mines, and, at times, the speculative foreign undertakings attract attention, but all confidence has been lost in them, there being but little hope in their future. Tramways make but poor progress, the expense of horsing and keeping the tramways in repair being heavier than expected. Steam navigation shares still suffer from the high price of fuel. Cable construction companies, from comparatively unremunerative contracts, and iron and coal undertakings, in many instances, have proved that original valuations were based on exceptionally fortunate periods.

SOCIETY OF ENGINEERS.—The volume of Transactions for 1873 has just been issued, and will prove of much value as well as interest not only to the members of the Society and others connected with the engineering profession but to general readers. It should be remarked that when Mr. Perry F. Nursey accepted the secretaryship the Transactions were much in arrear, but the arrears have now been cleared off, and future volumes may be expected as soon as due; for this improved state of affairs Mr. Nursey is certainly entitled to the best thanks of the members, more especially as the manner in which he has edited the Transactions leaves nothing to be desired. In addition to the inangural address of Mr. Jabez Church upon his re-election as President, there are papers on Continuous Railway Brakes, by Mr. W. H. Fox; on Horse Railways and Street Tramways, by Mr. Henry Gore; on Charging and Drawing Gas Retorts by Machinery, by

Mr. John Somerville; on Railway Train Intercommunication, by Mr. S. A. Varley; on Recent Improvements in Pumping-Engines for Mines, by Mr. Henry Davey; on the Economic Use of Blast-Furnace Slag, by Mr. Perry F. Nursey; and on a New Method of Setting Out the Slopes of Earthworks, by Mr. Charles J. Light. The papers are amply illustrated, and the volume is excellently printed. It is gratifying to find that the society is in a highly prosperous condition.

LETTS'S DIARIES.—For so many years the diaries of Messrs. Letts have been so extensively used by commercial men that it is only necessary to announce that the new annual editions have now been issued to ensure them a favourable reception. Amongst the cheap office diaries No. 46 appears to be a very useful size—that of an octavo, 8 in. by 5 in.—and will no doubt be largely used by men of business, since it can when necessary be carried in the pocket, yet is not so small as to be liable to be mislaid in the office. The use of a good neutral tint blotting paper for interleaving adds much to its appearance. When intended exclusively for pocket use No. 24, which can be contained easily in a foolscap envelope, is a very convenient size, and when put up in French morocco is really a handsome little pocket book. The diary and calendar contain all the information likely to be required.

AUSTRALIAN RAILWAY ENTERPRISE.

One of the most cheering features of the late, upon the whole, gloomy month of December, 1874, was the conclusion—or rather the negociation, for the whole is not yet allotted definitively to the applicants—of a 4 per cent. loan of 1,000,000*l.* by the Government of New South Wales. So recently as 1866, New South Wales was fain to borrow at somewhere about 7 per cent. per annum, taking into account the issue price of the debentures which the colony then negociated. In 1868 the financial position of New South Wales had improved, and the Government was enabled to raise a good solid 1,000,000*l.* at about 5¼ per cent. per annum. Since 1868 the value of Colonial Government debentures has come to be more and more appreciated; and in December, 1874, we find the Bank of New South Wales offering another 1,000,000*l.* of the debentures of that colony bearing the very moderate intererest of 4 per cent. per annum. It is true that the credit of New South Wales is not yet sufficiently strong to enable her Finance Minister to issue 4 per cent. debentures at par, but they will probably be disposed of at about 91*l.* As the debentures have 28 years to run—being redeemable at par in 1903—New South Wales is now enabled to raise capital for reproductive works at a charge of as nearly as possible 4¾ per cent. per annum. This is a charge which is, of course, calculated to encourage the New South Wales authorities to persevere in the prosecution of railways, and we are not at all surprised to find that New South Wales proposes to devote 1,500,000*l.* to the important work of railway construction in the course of the current year. Victoria and Queensland finding their credit strengthening in common with that of New South Wales (in fact Victoria is financially the strongest member of the group) have each issued substantial amounts of 4 per cent. debentures; and in the course of the last few months South Australia has also appeared with a proposal for the issue of similar debentures, bearing similar interest, to the tune of 600,000*l.*

Under all the circumstances, it seems probable that 4 per cent. per annum will become the standard rate of interest for Australian Government debentures. The Australian group of settlements are every day growing in power, population, and *prestige;* and accordingly it becomes easier for it to raise capital in Europe at a cheaper rate of interest. At present Australian 4 per cent. Government debentures cannot be disposed of at par, but in the case of New South Wales we have seen that Australian credit has been steadily and progressively strengthening during the last eight years, and what holds good of New South Wales applies more or less equally to all her neighbours. It seems probable, then, that in 10 years time we shall see Australian 4 per cent. Government debentures floating in the London market at 97 or 98, and perhaps even at par, since a few years regular payment of coupons always creates a *clientele* for any class or series of bonds. We have been at considerable pains to narrate recent Australian financial facts and to develope our views in some detail with regard to the general position and prospects of Australian credit, because the possession by the various members of the Australian group of a strong credit has an obvious tendency to greatly increase their power and disposition to embark in the prosecution of more railway works. With increased competition on the Continent of Europe, and with an almost complete collapse of the American demand, it is obviously a matter of great importance to the English iron trade that it should be doing all in its power to open out fresh markets, or that fresh markets should be opening out for it. The prosperity and vigour of the Australian group of colonies has afforded valuable aid to the home iron trade in the matter of rails during the last 12 months. Thus Australia ranked third last year among our foreign and colonial customers for rails. In the first 11 months of 1872 we only sent the Australian colonies about one-twentieth the quantity of rails which we forwarded in the same period to the United States; but in the first 11 months of last year our rail shipments to Australia pressed those to the Great Republic very hard, and nearly came up with them. In 1875, our iron relations with the Australias appear likely to experience a still further expansion, and of course it is highly satisfactory that this should be the case.

REPLACEMENT OF METALS.—In the second juvenile lecture at the Royal Institution by Prof. Gladstone, F.R.S., it was shown that if a piece of metallic zinc be dipped in a solution of sulphate of copper it displaces the copper, which makes its appearance in crystals, while sulphate of zinc forms and dissolves. All the metals differ from one another in their power of holding their place in combination. Silver was replaced in its salts by mercury, mercury by copper, copper by tin, tin by zinc, zinc by magnesium, magnesium by sodium. This is called the order of "chemical affinity." At the first moment the action must be conceived as purely chemical, but after the first particles of the second metal have been deposited it becomes also voltaic. A current passes from the one metal to the growing and branching crystals of the other metal, and the liquid between is also placed in a peculiar conpition of change, as the metallic particles arrange themselves symmetrically in one place, and their former partners enter into a new combination in another. These crystallisations of silver, gold, bismuth, lead, and other metals were exhibited in various ways, and formed beautiful objects when thrown on the screen by the electric light, or viewed under the microscopes that were ranged in the anteroom of the lecture theatre. There was a good audience notwithstanding the fog.

PROPERTIES OF GUNPOWDER.—The interesting experiments which have been going on for some time at Woolwich Arsenal, under Prof. Abel and Capt. Noble, have now proceeded far enough to permit of a preliminary report. The objects of the investigation were to ascertain the products of explosion when fired in guns or mines, the tension, the effect of various sized grains, the variations produced by various conditions of pressure, the volume of permanent gas, the heat and the work performed in a shot in the bore of a gun. For these purposes a steel chamber was used, closed with a screw plug, through which circuit wires were led, and the powder fired by electric current. The pressures were registered by crusher gauges, and when the powder fills the space in which it is fired it is found that the pressure is about 6400 atmospheres, or 42 tons, per square inch. The temperature of explosion is found to be about 2200° centimetre. When gunpowder is fired in small arms, about 35 per cent. of the heat generated is communicated to the barrel, but only 3 per cent. is absorbed by an 18-ton gun. The products of explosion are about 57 parts of solid to 43 parts of permanent gas. The analysis of the gaseous products showed a regular change due to variation in pressure, carbonic anhydride increasing, with a decrease in carbonic oxide, as the pressure increased. The solid products were subject to greater and less regular variation, generally speaking the chemical action is more complicated than has hitherto been supposed, and the old fundamental equations are found to represent it very imperfectly.

MOULDING SMALL COAL, PEAT, &C.—MR. HARCOURT, of Randolph-road, Maida Hill, has patented some improvements in presses to be used in the manufacture of bricks, and for squeezing or moulding clay, fire-clay, small coal, peat, and other compressible materials. Moulding wheel on horizontal axis with chambers recessed inwards from the periphery and plungers working in the chambers, and carrying rollers acted on by cams (on frame) employed in combination with a strap or lever arm, moving on a fulcrum at one end, and at the other end carrying a cover to close in succession the several chambers of the moulding wheel.

ARTIFICIAL STONE.—Mr. J. M. ROBERTSON, of Melbourne, Australia, has invented an improved means of manufacturing artificial stone. First he takes a base of sand, gravel, shingle, and stones, glass, burnt clay, and like materials, either separately or mixed, and then in triturating this matrix with water, having either a chloride, a bromide, an iodide, or a fluoride, preferably in saturated solution chloride of calcium being preferred on account of its cheapness. The material so treated is then placed into moulds and subjected to high pressure in screw, hydraulic, or other presses, and the blocks afterwards placed on wet sand beds, where they set or harden in a short time, the setting being accelerated by having the blocks a hort time in the solution before placing them on the sand beds.

GENERATION OF STEAM.—The invention of Mr. G. H. LLOYD (T. Piggott and Co)., of Birmingham, consists of a boiler composed of two or other number of hollow spheres, connected together by openings made at opposite points or by short tubes, so that they communicate with each other. In the spheres a tubular flue, or flues or tubes are fixed, the flue or flues or tubes being of less diameter than the openings or connecting tubes of the spheres, so that there is free circulation between the interior of the spheres. Each sphere is connected with a steam-chest. The combined spheres and flue or flues are so set in the furnace that the fire passes under the spheres, through the flues in their interior, and after emerging from the flues divides itself and passes through side flues on either side of the spheres, and thence to the stack. Or the furnace may be within the tubular flue of the boiler, as in the Cornish boiler.——An invention for a similar purpose has been patented by Messrs. MATHER and DODGE, of the Salford Ironworks; it relates to the arrangement of the parts forming an improved steam generator, also to the apparatus for superheating steam, and for cleaning the tubes of steam-boilers. Their improved steam generator consists, by preference, of five compartments, but the number may be varied. The upper compartments contain water and steam, the intermediate compartments contain water, and the lowest compartment, which is multitubular, also contains water. The fire-grate is placed under one end of the upper compartments, and the products of combustion pass downwards to the chimney. The tubes are cleaned externally, by hand or by self-acting scrapers, and internally by revolving spiral blades, driven by worms and wheels. The apparatus for superheating the steam consists of a series of pipes connected to the upper parts of the boiler and placed in a flue.

COLLIERY EXPLOSIONS, AND THE WEATHER.

The connection between colliery explosions and the weather in 1872 forms the subject of a communication from Messrs. R. H. Scott, F.R.S., and William Galloway, Inspector of Mines, to the Meteorological Society, which is specially interesting, as showing the readiness with which the reconciliation by hypotheses with facts is accepted as a substitute for conclusions resulting from sound logical reasoning. The paper in question is a continuation of similar contributions relating to the years 1868-70 and 1871, and the authors point out that during 1868-70 the total number of explosions was 550, and of these they attribute 49 per cent. to barometrical disturbances, 22 per cent. to thermometrical disturbances, and 29 per cent. to neither. In 1871 there were 207 explosions, of which they attribute 55 per cent. to barometrical disturbances, 19 per cent. to thermometrical disturbances, and 26 per cent. to neither. In 1872 there were 233 explosions, of which they attribute 58 per cent. to barometrical disturbances, 17 per cent. to thermometrical changes, and 25 per cent. to neither. And they add that it seems to them hardly necessary to say that they think the connection between explosions and meteorological agencies is fully proved by the above figures. That there may be some such connection is undoubtedly possible, but so far from the above figures fully proving it they afford no proof whatever, and to rely upon such very slender arguments would be extremely dangerous.

Connecting these hypotheses with already ascertained facts, the authors state that the sudden and serious fall of the barometer accompanying the storm of January 18 produced four explosions on January 19, while the more gradual, but in England more extensive, depression of January 24 only caused four, distributed over as many successive days, thereby illustrating, as they think, the remarks in their first paper, that it is the first disturbance of pressure after a period of high barometrical readings which causes the most explosions. The general disturbance of pressure on April 21 was followed by six explosions (two of them fatal) on the following day. This, they think, may perhaps be due to the circumstance that the atmospherical changes occurred on a Sunday, so that the workings were in an exceptionally dangerous state when they were entered next morning. The series of six explosions at the end of August is connected by them with the reduction of pressure at that time; but there is no very striking concommitance of these accidents with a barometrical fall until October 31, when there two fatal and two non-fatal occurrences. The disturbances in pressure on Nov. 23, after a long period of calm weather, produced four explosions on that day, and the same agencies caused four more before Nov. 27. On Dec. 2, again a Monday after a barometrical minimum on the Sunday, there were three explosions, two of them fatal. The depression on Dec. 5, and the more serious oscillation of Dec. 9, produced each of them four explosions.

Noticing that an objection has been raised to the conclusions at which they have arrived in their former papers, on the ground that a record of meteorological phenomena at a single station, like Stonyhurst, cannot possibly give a correct indication of the forces which are in operation at the same time (say) in Leicestershire or South Wales, Messrs. Scott and Galloway remark that it is hardly necessary to remind the Society that such an objection could never have proceeded from anyone who was familiar with the character of the areas of barometrical depression. These areas are usually more or less circular in shape, and vary in diameter from 50 to, perhaps, several hundred miles. Over the whole region, covered by such a system of depression, the barometer falls more or less below its ordinary reading, according to the character of the disturbance, and according to the respective station or colliery, as the case may be, with regard to the path taken by the centre of the storm, or point of lowest pressure; the fall being necessarily greater the more central the situation of the station. Roughly speaking, the difference is 0·1 in per 50 miles. It must be remembered, they add, that while at the centre of such a storm the meteorological disturbance may have been such as to liberate a sufficiency of foul air to render the workings eminently dangerous.

With regard to the effect of wind upon explosions, Messrs. Scott and Galloway remark that there is a very general impression abroad to which abundant utterance was given before the Parliamentary Commission in 1849, that explosions are more frequent with certain winds than with others. Thus Dr. Hutchinson says "there has been no explosion with a north wind since 1800," and other witnesses speak to the same effect. Messrs. Scott and Galloway consider that in all such evidence one most important element has been left out of consideration—the relative frequency of the different winds; and remarks such as that above quoted are similar to those in the earlier Wreck Returns of the Board of Trade, where it was persistently asserted that south-west winds were the most destructive winds to shipping. It is, however, hardly necessary to remind the Society that as the mean direction of the wind over the United Kingdom lies between south-west and west, and as south-west storms are far more frequent than those from other quarters, it would be a very strange fact if the total amount of damage to shipping did not reach a maximum with south-west winds. It is held by some authorities that the undeniably greater prevalence of explosions with southerly winds is attributable to the fact that the windrose shows a maximum of temperature and of vapour tension and a minimum of barometrical pressure when the true equatorial current is blowing. These ideas are, however, in Messrs. Scott and Galloway's opinion, hardly borne out, at least quantitatively, by the actual figures; for taking the baric and atmic windroses for the year, and the thermic windroses for the different seasons and for the year given by Dove and Kaemtz (Schmid, "Lehrbuch der Meteorology") for London, as a reasonably fair indication of the climate of these islands, it is found that the greatest difference in barometrical pressure is only ¼ in., while in vapour tension the change from north-east to south is only one-half of that amount; while as regards temperature the greatest contrast between the same points of the compass, even in winter, is only 10°, and at other seasons is far less than that amount. It will also be noticed that in summer, when most of the explosions due to high temperatures occur, the amount of difference between the temperatures for the warmest and coldest points is not as much as 5°.

The fact appears, according to Messrs. Scott and Galloway's views, to be that the changes which principally affect the condition of the air in a mine are the sudden oscillations which accompany the rapid variations of weather. At the time that the evidence referred to was given, more than 20 years ago, the true relation of the wind to the distribution of atmospherical pressure was not understood. It is now known that all motion of the air takes place between areas of low and high pressure, termed respectively "cyclonic" and "anticyclonic." The air is either whirling into a cyclonic area, or whirling out of an anticyclonic area. It is seen, therefore, that, according to Buys Ballot's law, a southerly wind—to take that which is generally considered to conduce more to explosions than other winds—may make its appearance either on the east side of a cyclonic area, or on the west side of an anticyclonic area. In the former case it will be accompanied by a low and falling barometer, a high temperature, and a large amount of moisture in the air; while in the latter case these several conditions will be, more or less directly, reversed.

LIQUID FUEL.—Some useful improvements in cooking, lighting, and heating, by means of liquid fuel, have been invented by Mr. J. H. Thorp, of New York, U.S. In the construction of the apparatus one or more troughs, communicating with a suitable reservoir, are arranged to confine a volume of water in contact with the wick-tubes or tubes of the burners in such manner as to maintain the same at a comparatively low temperature, and thereby prevent the heating of the oil below and all danger of evil results therefrom. The volume of water is moreover provided in such relation with the chimneys of the burners that the aqueous vapour rising to the flame increases, as has been found by experiment, the intensity of the heat evolved. A volume of water, furthermore, is interposed between the burners and the openings in the wick-tubes, through which work the wick-adjusting devices in such manner as to prevent the flame of the burners from jumping to the said openings and igniting the wick below the top of the wick-tubes. The oil inlet of the oil receiver is made of such size and so arranged that it serves the purpose of a hand-hole through which the wicks, if for any reason dropped from the wick-tubes, may be recovered. Fixed lugs are provided to pass through slots in the base-plate of the system of chimneys for the burners, thereby retaining the said chimneys in position for use, and yet permitting their ready removal when desired, A foraminated plate being provided around the wick-tubes and below the system of chimneys, the said plate is furnished with an upwardly-projecting rim or equivalent means of supporting the chimney without permitting such contract thereof as would permit the rapid conduction of heat from the chimney to the aforesaid plate. The chimneys have their sides formed of plates of mica, which, from their low heat-conducting power, retard the lateral transmission of heat, and thereby ensures its passage upward through the chimneys, as required for cooking purposes, whilst, from the transparent character of the mica, the light is permitted to pass laterally, and be availed of in the same manner as a lamp or candle light. When the apparatus is to be used for heating purposes a radiator is placed over the chimneys, and heated by the hot currents issuing from the tops thereof warms the room or apartment in which the apparatus is placed. When used for simultaneously baking and steam cooking, a steam generator, formed with passages coincident with the tops of the chimneys, is supported above the latter, and upon this steam generator is placed an oven, the steam from the generator being conducted through a pipe to a suitable chamber separately provided, and the contents of which are cooked by the steam at the same time that the contents of the oven are cooked by dry heat communicated from the hot currents from the chimneys passed to the passages in the steam generator, the heating of the oven being also facilitated by its immediate contact with the said generator. The system of chimneys are placed with their lower ends resting upon a base-plate cast with a series of cones, and their upper ends against a top-plate having openings coincident with the tops of the chimneys, the two plates being clamped against the ends of the chimneys by suitable bolts holding the whole together, so that the system of chimneys may be placed bodily in proper relation to the series of wick-tubes, or removed therefrom when required.

FOREIGN MINES.

RICHMOND CONSOLIDATED.—Cablegram from the mine at Eureka, Nevada: Hall, London: $50,000; No. 1 furnace relining.

MINERAL HILL.—Mr. Oakes, the superintendent (Dec. 7) writes—We have raised during this week 40 tons of ore, of an average grade of $30 per ton.

ALMADA AND TIRITO.—Telegram from the manager, Mr. J. P. Clemes: November profit for the month, $13,401; remitting, $14,000.

BIRDSEYE CREEK (Gold).—G. S. Powers, Dec. 3: I last wrote you on the 27th ult.; we then had about 1000 inches of water, but, owing to the weather being dry and cold since, it has fallen back to 500 inches. Birdseye canyon at that time was blocked with Neece tailings, and things looked as though we might have considerable trouble from that source, but for the past week we have had no trouble in keeping our dumps clear. The Peohey Tunnel was in from first face on Nov. 30, 468 ft.; shaft face, 51 ft.: total, 519 ft. Distance to run, 256 ft., to connect first face with shaft. I have relaid the supply pipe on the Stehr claim in such a manner that it will not have to be changed when we get the shaft tunnel ready for opening. I shall have the flume ready for washing through by the 6th instant, but we cannot look for plenty of water much before Christmas or New Year.

BLUE TENT.—C. W. Tozer, Dec. 12: I am pleased to be able to report that since the date of my last washing on the Enterprise claim with three giants has been going on quite satisfactorily. We have also commenced, on 10th inst., washing on South Yuba claim. I have from the commencement of this season employed a new foreman on the South Yuba works. He has had large experience in powder-blasting, and has had the charge of work on mining ground of character similar to that of South Yuba. I have one man in charge of head of ditch flume, storehouse, lumber, &c.; from him I hear that everything goes well at that point. The ditch and flume as far as completed is full of water.

TOLIMA.—The directors have received advices from their mines which report that the estimated value of the October consignment of ore amounts to $8856, obtained at a cost of $7345, thus showing a gross profit of $1511, representing a sterling value of 251*l.* 15*s.* The mining captain states that several accidents to the pumping machinery have tended to reduce the month's returns.

MALPASO GOLD WASHING.—Advices have been received dated Nov. 19, accompanied by a remittance of 126¼ ozs. gold, valued at 486*l.*, which had been obtained after a run of 604 hours on new dirt and 243 on waste, with an average head of water of 347 in.

FRONTINO AND BOLIVIA.—The directors have advices (Nov. 12) accompanied by a remittance of gold valued at 1487*l.* 2*s.* 6*d.*, the produce of the mines, and from gold purchased at the mines for the month ending Oct. 20.

ANTIOQUIA (Frontino).—The directors have advices (Nov. 12), accompanied by a remittance of gold, valued at 260*l.* 12*s.*, the produce of the mine for the month of October last. Messrs. Restrepo, after expressing their satisfaction at the establishment of the company, state that we may count upon their continuing to take all the measures necessary for the development of the Frontino Mines.

DON PEDRO.—Letter from mine captains, dated Nov. 23: The ores continue to be taken from the canoa, No. 6 and No. 8 shoots; no boxwork available during the week. Operations, considering our force, have been continued satisfactorily. The 35 fm. cross-cut, which is being turned more easterly, is advancing favourably. We have commenced to-day to open the incline shaft from the 30 down towards the 35 cross-cut level. The water being drawn from the mine still amounts to 19·46 cubic feet per minute. Stoping throughout has been continued without change. In our explorations nothing new has been discovered.

UNITED MEXICAN.—E. Hay, Guanaxuato, Nov. 25: In the mine of Jesus Maria there is no change of importance in the workings. The buscone sales have continued on their former footing. In the new concern the end west of the adit is continued on the lode, which looks encouraging, and contains traces of silver. In Santa Elodia the water continues, and the lode must be near. The sales of ore from San Antonio and San Miguel have not passed the former average. Water is coming in great quantities from the adit of the Ave Maria, lately communicated with old workings, and in the mine of Buenos Ayres the water had gone down half a metre in the last three weeks.

SAN PEDRO.—R. M. Kitto, Nov. 17: We have now 17 carts bringing up machinery and material from Salados; we shall have all brought up by the end of December. I hope you will remit the necessary funds for carrying on the works, so as to be able to get the engine to work as soon as possible.—Mine Report—New Shaft: The water is bein g kept 14 metres below the 135; we are not doing anything inside the mine, as the people are, when not engaged drawing water, employed in placing the materials most conveniently for use when not required.—Cuba Mine: A cross-cut driving south 68° 30′ east, by two men, at $14 per metre; ground favourable. A side level driving nearly south, by one man, at $9 per metre; good stones of carbonate of copper are being met with here. A side level driving nearly north, by one man, at $9 per metre; the ground is splendid for cutting a lode of ore in the next manto we meet with, that is if we are deep enough, if not I shall sink a chiflon to prove how the mantos are in depth: 100*l.* sent from London had not been received by our agents in Chili at the above date.

[For remainder of Foreign Mines, see to-day's Journal.]

QUICKSILVER IN CALIFORNIA.—A Correspondent, referring to the Redington Mine, says—"This mine is worked with skill, energy, and capital. They have in all six furnaces, and and pay a profit of over 100,000*l.* a year. This mine was offered for sale a few years since in England, but could not now be obtained for three times the sum then asked. The quality of the ore is similar to that of the Reed, and the portion of the lode now being worked is almost uniformly rich. The mine covers large tracts of land, raises its own cattle and grain, and possesses its own town for its workpeople—a great advantage, as the manager can thus keep the place clear of the drinking shops and objectionable characters.

CHICAGO.—The Chicago smelter is running day and night, and to its full capacity (two stacks) producing 60 tons per day. The dumps of the smelter are piled with thousands of sacks of ore from the mines of Stockton, Dry Canyon, and Ophir. It is a very interesting sight to see the number of teams loaded daily with bullion bound for Salt Lake.—*Mining and Scientific Press*, Dec. 12.

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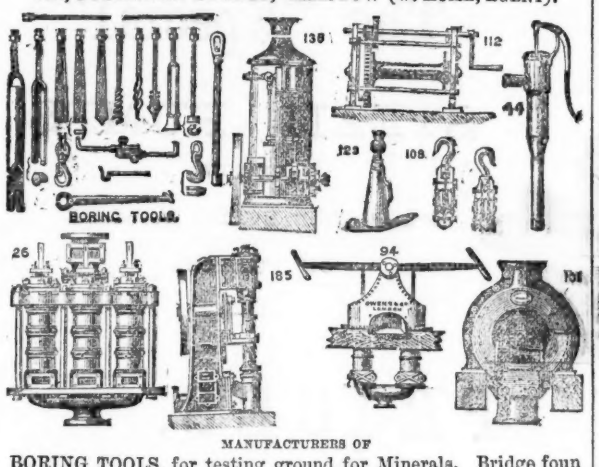

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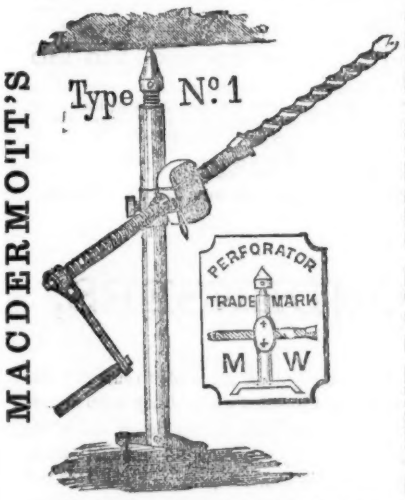

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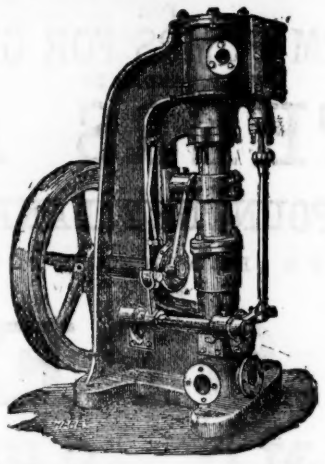

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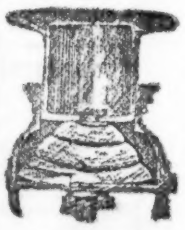

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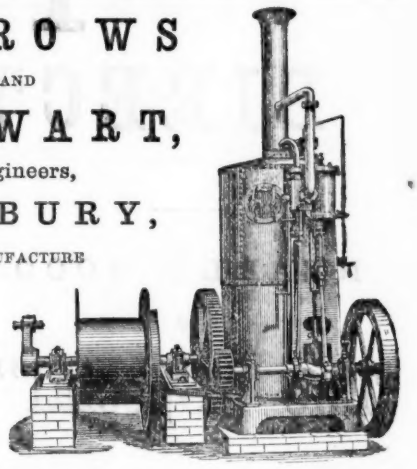

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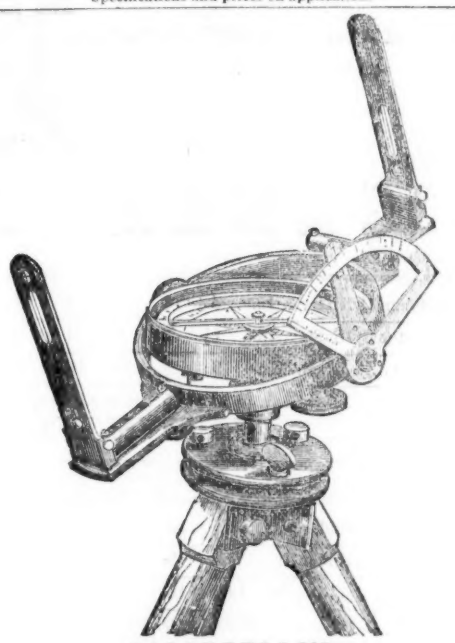

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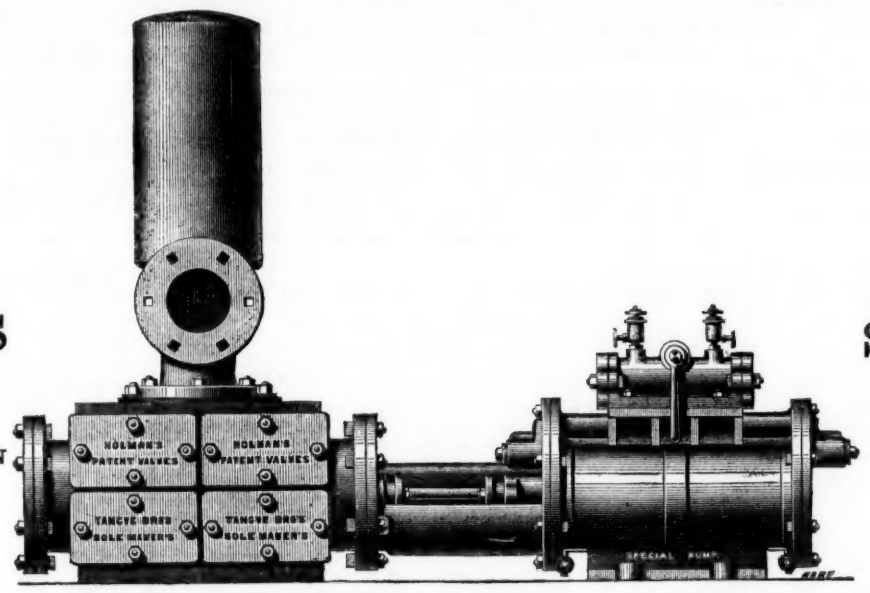

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Length of Stroke .....In.	9	9	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	18	12	12	12	18	24	12	12
Gallons per hour	680	815	1830	3250	1830	3250	5070	1830	3250	5070	7330	1830	3250	5070	7330	9750	3250	5070	7330	9750	13,000	5070	7330	9750	13,000	16,519	5070	7330
Price .....£	**16**	**18**	**20**	**25**	**22 10**	**27 10**	**32 10**	**25**	**30**	**35**	**40**	**30**	**35**	**40**	**45**	**50**	**40**	**45**	**50**	**55**	**65**	**50**	**55**	**60**	**70**	**85**	**55**	**60**

CONTINUED.

Diameter of Steam Cylinder..In.	10	10	10	10	12	12	12	12	12	12	14	14	14	14	14	14	16	16	16	16	16	18	18	18	18			
Diameter of Water Cylinder..In.	7	8	9	10	6	7	8	9	10	12	7	8	9	10	12	14	8	9	10	12	14	9	10	12	14			
Length of Stroke .....In.	12	18	24	24	18	18	18	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24			
Gallons per hour	9750	13,000	16,519	20,000	7330	9750	13,000	16,519	20,000	30,000	9750	13,000	16,519	20,000	30,000	40,000	13,000	16,519	20,000	30,000	40,000	16,519	20,000	30,000	40,000			
Price .....£	**55**	**75**	**90**	**100**	**75**	**80**	**85**	**110**	**120**	**140**	**110**	**120**	**130**	**140**	**160**	**180**	**140**	**150**	**160**	**180**	**200**	**190**	**200**	**220**	**240**			

Intending purchasers of Steam Pumps would do well to observe the great length of stroke, short steam cylinder, and short piston of the "Special" Steam Pump, as compared with the short stroke, long steam cylinder, and long piston of the Pumps of other makers, as the efficiency and durability of the machine, and the space occupied by same, greatly depend upon this. The advantage of long strokes will be obvious when purchasers are reminded that each set of suction and delivery valves of a "Special" Steam Pump with 24 in. stroke, running at 120 ft. per minute, would open and close only 30 times per minute, as against 120 times per minute in a Pump with only 6 in. stroke performing same duty.

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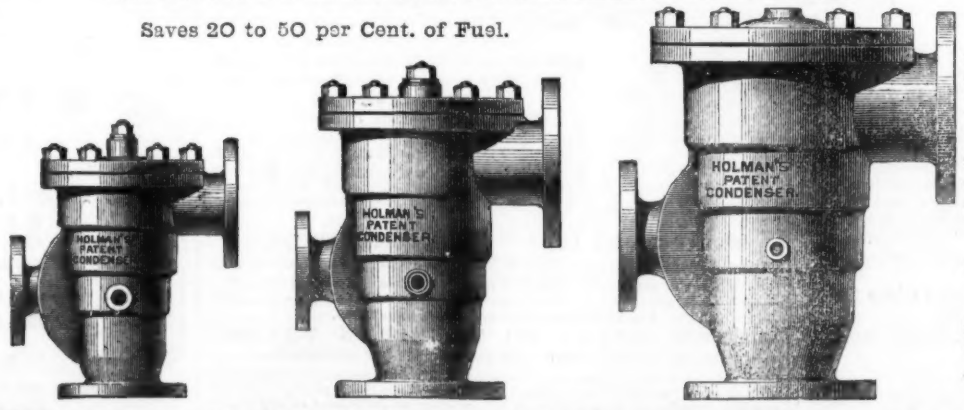

These Condensers are made to suit any size and kind of Steam Pump. They form a part of the suction pipe of the Pump, and while they effectually condense the exhaust steam, they produce an average vacuum of 10 lbs. per square inch on the steam piston, increasing the duty of the Engine, and effecting a saving in fuel of from 20 to 50 per cent.

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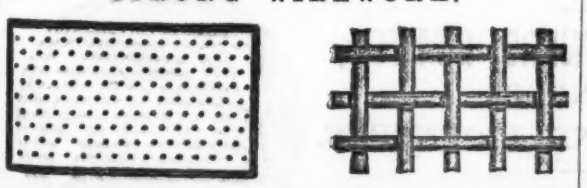

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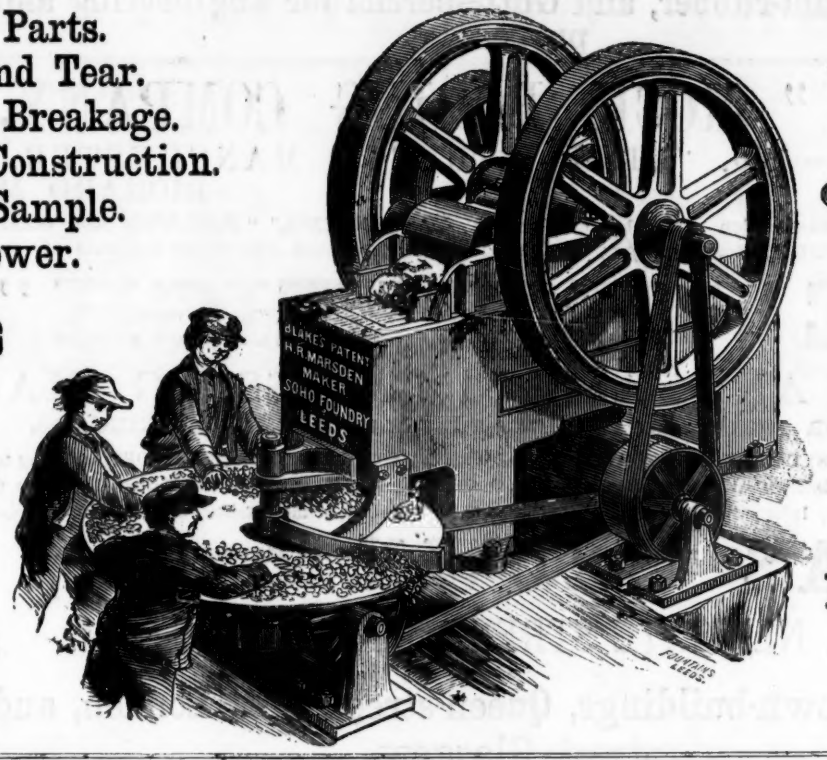

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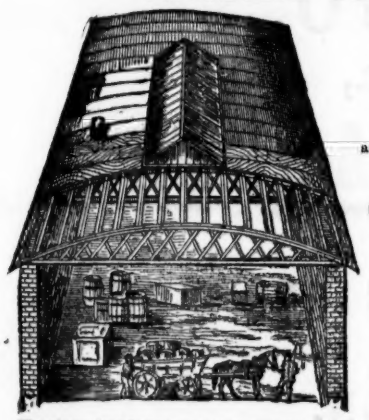

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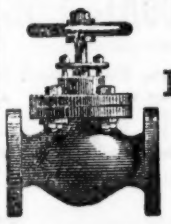

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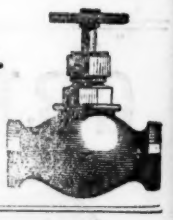

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